# FORT STEWART, GEORGIA

# TERRAIN ANALYSIS



PREPARED BY

THE TERRAIN ANALYSIS CENTER

US ARMY ENGINEER TOPOGRAPHIC LABORATORIES

FORT BELVOIR, VIRGINIA 22060

DECEMBER 1976

U.S. Army Topographic Engineering Center
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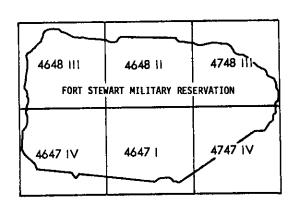
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## I. INTRODUCTION

#### BACKGROUND

The requirement for this terrain analysis of Fort Stewart was stated in message P241854Z, Oct 75, from the Commander, FORSCOM to the Office Chief of Engineers (OCE), Department of Army, subject: "Terrain Analysis of Selected FORSCOM Installations." The FORSCOM requirement identified 13 installations (later amended to include a total of 17) including Fort Stewart, and cited topical coverage to be included in the studies. Responsibility for management and supervision of the program developed in response to the FORSCOM requirement was assigned by OCE to the Terrain Analysis Center (TAC), US Army Engineer Topographic Laboratories. At FORSCOM request, TAC responsibility also includes technical supervision and direction of FORSCOM troop units assigned to the program.

Scope and content of the topical coverage included in the FORSCOM requirement were developed jointly between representatives of TAC and FORSCOM Headquarters. Analytical and cartographic specifications for the studies were developed by TAC, coordinated with OCE and concurred in by FORSCOM Headquarters.

This study of Fort Stewart is the first to be published under the program of terrain analyses of selected FORSCOM installations.

#### **PURPOSE**

In stating the requirement for terrain analyses of selected installations FORSCOM indicated that the purpose of the program is to assist military planners in future stationing decisions. To achieve this purpose, planners must obtain an appreciation of the on-post terrain that includes among many other things, knowledge of the suitability for conducting field training exercises involving maneuverability of troops and military vehicles. The degree of maneuverability that can be achieved is a function of several terrain factors including slope, surface configuration, soils, vegetative cover, and surface drainage, all of which are treated in the studies.

Planners concerned with troop stationing also need certain off-post information such as statistics on housing, schools, hospitals, and public utilities in urban areas near installations, as well as pertinent data on airfields and ports in the vicinity. These things are also treated in the studies.

Since the program under which this study was prepared is intended to serve troop stationing requirements, the support provided by the program to environmental requirements is only incidental. While some of the information contained in the studies may be useful as environmental base line data, the studies are by no means complete environmental inventories of the kind required in support of environmental impact assessments.

#### SCOPE

In scope, the terrain analysis is a compendium of available data on the pertinent natural and manmade features of the reservation and an evaluation of their effects on tactical military operations. The program does not include basic research to fill gaps in these data although some short-term field investigations were performed to obtain ground truth and a general overall appreciation of terrain elements. Therefore, the scope of the analysis is limited primarily to those factors which have been documented by other authorities and to the results of analysis and evaluation of those factors by senior terrain analysts for topics such as cross-country movement, cover and concealment and water resources.

The terrain analysis preparation process has necessarily involved analytical judgement in the selection of pertinent source data, resolution of data conflicts, recognition of interrelationships not previously made explicit, and the application of remote sensing to update certain critical, time-variant data such as vegetative cover and manmade features including roads, airfields, and facilities constructed outside of the cantonment areas.

### LIMITATIONS

The study naturally reflects limitations in the quality, amount, and currency of the source data on which it is based. Numerous field interviews and selective use of remote sensing were employed in an effort to assure presentation of the latest and best information. Within the relatively complex topical scope of the analysis, however, there are a number of aspects on which source data have not been generated with the focus or recency desired to meet objectives fully. As noted under Scope, the study effort was not designed to include basic research as a means of filling gaps in data.

By design, the presentation is cast at a level of data coverage consistent with stated objectives. Users interested in deeper pursuit of data are referred to the List of Sources in the back of the study.

## PRESENTATION

Maximum use of graphic presentation has been made throughout the terrain analysis. Supporting text is, as far as practicable, in tabular format keyed to the related graphics which follow. The primary map scale is 1:50,000. For Urban Areas (Cantonment Area) the scale of the map is 1:9,000 and for Off-Post Features the map scale is 1:1,000,000.

## STUDY AREA

The Fort Stewart military reservation is located on a portion of the Atlantic Coastal Plain in southeastern Georgia, about 41 miles southwest of Savannah. The reservation extends about 32 miles east-west and 17 miles north-south, an area of 279,568 acres (437 sq mi). It includes parts of five counties -- Bryan, Evans, Long, Liberty and Tattnall. The reservation is readily accessible by major east coast thoroughfares, US 17. US 301 and Interstate 95, and it is crossed north-south by Georgia Highway 119 and east-west by Georgia Highway 144.

The surface, highest in the west and lowest in the east (about 10 feet a.s.l.), is flat to gently sloping with many poorly drained areas, particularly along streams. These drainageways are covered primarily by dense, bottomland hardwoods. Away from the streams, the forests are mainly pine stands of varying densities, interspersed with numerous small to large, open grassy fields. Almost all of these forests and fields are drained by the tributaries of the Canoochee River which flows southeastward to join the Ogeechee River on the eastern edge of the reservation. These streams are fed primarily by rain falling during the hot, humid summers and mild winters; snow rarely is seen. Even though the highest amount of rainfall occurs in summer, much of it is lost by evaporation and transpiration, causing the low-water periods of streams to occur in summer and the higher waters during the cooler season.

## II. DESCRIPTION AND MILITARY ASPECTS OF TERRAIN

## A. Surface Configuration

The entire Fort Stewart reservation is coextensive with other parts of the greatly elongated physiographic province known as the Atlantic Coastal Plain. As such, it has prevailingly low-level surfaces ranging from about 1 meter (3.3 ft) above mean sea level on the easternmost part to 56 meters (183 ft) on the western edge. The surface configuration is controlled mainly by a large number of small-to-moderate-sized streams that have been superimposed on parts of three nearly level to gently rolling terraces, associated low escarpments, an old north to northeast trending barrier bar formation, and, in the extreme east, a small area of recent riverine sediments. These landforms, all of shallow marine and shoreline origin, are underlain by predominantly unconsolidated marine sands, clays and silts. A substantial part of this area is less than 30 meters (100 ft) above mean sea level, highest in the extreme west and decreasing in relatively broad steps toward the east. Slopes are, for the most part, less than 3 percent over large parts of the nearly level terraces. Locally, slopes are up to 50 percent in gullied areas of the westernmost bluff and on eastward facing bluffs that form broad valley sides where the two major streams, the Canoochee River and Canoochee Creek, have cut through the barrier bar generally north of the main cantonment area. From west to east, the principal landform features are as follows: Okefenokee terrace and escarpment; Wicomico terrace and associated barrier bar; the Penholoway terrace; and, the Pamlico and Silver Bluff Formations.

LANDFORM TYPE

LANDFORM DESCRIPTION AND DISTRIBUTION

ELEVATIONS

Low Plains

DRAINAGE

Flat to gently rolling surfaces predominate, generally with relief of interstream areas from 1 to 10 m (3.3 to 33 ft) above nearby valley bottoms; slopes largely between 0 and 3%. Flattest surfaces, with local relief largely less than 1 m (3.3 ft), extend continuously along most drainageways up to .8 km ( $\frac{1}{2}$  mi) on each side. Numerous small to large, flat, wet depressions scattered throughout. Slightly to moderately dissected plains form a belt, 1.6 to 3.2 km (1 to 2 mi) wide, along the western edge of the reservation with relief of interstream areas generally 12 to 26 m (40 to 85 ft) above adjacent valley bottoms; slopes largely between 3 and 15%. Several discontinuous bluffs, up to 6.4 km (4 mi) long and from 6 to 15 m (20 to 50 ft) high, line mainly the right bank of the Canoochee River to just east of junction with Canoochee Creek; faces of bluffs with slopes largely between 3 and 15%, but maximums to 50%. Bluffs, about 2.4 km ( $\frac{1}{2}$  mi) long and 6 to 9 m (20 to 30 ft) high, just north of Savage Creek (UTM Grid Reference 518405).

Elevations, rising gradually east to west, mainly between 9 and 30 m (30 and 100 ft) above sea level. Lowest elevation about 1 m (3.3 ft) near confluence of Canoochee and Ogeechee Rivers. Highest elevation, 56 m (183 ft), near northwest boundary (UTM Grid Reference 192460).

## B. Surface Drainage

Almost all of the surface waters of Fort Stewart drain into the Canoochee River, eventually passing through the southeastern corner of the reservation to join the south flowing Ogeechee River. The remaining surface waters represent a relatively small percentage of the total volume of water leaving the area. Some streams along the eastern margin move to the Ogeechee River through ill-defined drainageways, others along the southwestern and southeastern margins move into small channels which leave the reservation to join the drainage systems of the Altamaha, North Newport and Medway Rivers.

Although the Ogeechee River does not pass through the Fort Stewart reservation, its west bank constitutes part of the reservation boundary. That bank is low and gradually sloping in swampy areas to above 3 meters (10 ft) and very steep in several areas where the river has cut into low bluffs. It is composed mostly of silty sand topped by organic material. This material is quite thin on the bluffs to a thick layer on low-lying, swampy banks. Tidal action occurs in the lower Ogeechee and in the lower Canoochee River, noticeably near its mouth.

The heaviest rainfalls in the Fort Stewart area are in July and August, with maximum averages slightly in excess of 15.2 centimeters (6 in). Although this occurs, evaporation and vegetative transpiration take off much of this moisture, and average stream discharge figures show these months to be in the low water period of the year. The closest station where systematic discharge measurements are taken on the Canoochee River is at Claxton, about 23.7 kilometers (14.7 mi) northwest of the reservation. In addition, four stream gages have been established on the Canoochee River within the reservation. They consist of staff gages from which water levels are occasionally checked; velocity measurements are taken at these sites by timing a floating object.

The average streamflow table, below, illustrates a 32 year average of monthly stream discharges and indicates a trend of high and low water periods. On a year by year basis, however, there is a great variability in the duration, time of onset and end of the high water period. For example, the high water period may range from early October to mid-January or may abate by the end of March or continue through September. Severe storms may cause unusually high water levels at almost any time. As an illustration of the erratic nature of drainage in the Fort Stewart area, a severe drought with low low water conditions prevailed during field observations, 18-23 April 1976, while a month later, on May 25, the Facilities Engineers on post were concerned over the possibility of high water exceeding the 25 year flood level. Average discharge measurements for the area, however, show April to be a high water month and late May to be the beginning of the low water period.

The US Geological Survey has mapped flood-prone areas in the Fort Stewart area, delineating areas that have a 1 in 100 chance on the average of being inundated during any year. In the western and northern portions of the post, the low-lying valleys of the Canoochee River, Canoochee Creek and Taylors Creek, adjacent low areas and mouths of small tributary streams would be subject to flooding. The eastern and southeastern parts of the reservation could become inundated over wide areas.

CATEGORIES	GENERAL	REGIME	WIDTHS	DEPTHS	VELOCITY AND DISCHARGE	BANKS	BOTTOM
Principal Stream Canoochee River*	Perennial stream, meandering south- easterly across wide, nearly flat coastal plain. Wide bands of swamps common along both banks, particularly in the eastern half of the reservation.	High water: February through April. Low water: June through November.	About 25 m (80 ft) in the west to 61 m (200 ft) in the east; on extreme eastern reaches, it may exceed 122 m (400 ft) with tidal influence.	From about 1 m (3 ft) in the west to 4.5 m (15 ft) in the east at low water to about 3 m (10 ft) in the west to 7.5 m (25 ft) in the east at high water. The max- imum recorded gage height at the Claxton gage is 5.05 m (16.58 ft).	Estimated velocities from field observations during high water, 0.35 m/sec (1.2 ft/sec) to 2.1 m/sec (7 ft/sec) and during low water, 0.06 m/sec (0.2 ft/sec) to 0.46 m/sec (1.5 ft/sec). At Claxton gage, average discharge for high water months, 25.8 m³/sec (910 ft³/sec) and for low water months, 6.4 m³/sec (227 ft³/sec). Average for highest month (March) is 33.3 m³/sec (1,177 ft³/sec). Maximum recorded discharge (26 May 1966), 353.6 m³/sec (12,600 ft³/sec).	Predominantly low, silty sand topped by organic material. Higher, drier banks have sand almost to surface. Swampy banks have thick organic top layer. Low and poorly defined adjacent to swamps; up to about 1.8 m (6 ft) and steep in scattered areas.	Mostly sand and silty sand. Some organic material may collect on sand where current slow. Mostly firm with gradual gradient.

## B. Surface Drainage

DRAINAGE CATEGORIES	GENERAL	REGIME	WIDTHS	DEPTHS	VELOCITY AND DISCHARGE	BANKS	воттом
Other Streams	Mostly perennial streams, meandering across wide, nearly flat coastal plain. Streams generally flow slowly through dense swamps, and channels sometimes become diffused.	High water February through April. Low water. June through November.	Canoochee Creek about 12.2 m (40 ft) near mouth. Most streams extremely variable, often dividing into multiple channels in swamps and at times becoming ill- defined. Streams often spread over wide areas, filling swamps during high waters.	Seldom deep, even in high water, probably less than 1 m (3.3 ft).	Velocities generally very low, often imperceptible. May reach several feet per second during floods. Headwater streams in west flow faster because of steeper gradients. Estimated maximum flood discharge of Canoochee Creek at dam about 141.5 m³/sec (5,000 ft³/sec). Estimated discharge at low low water, about 0.05 m³/sec (2 ft³/sec).	Mostly silty sand with organic top layer. Organic layer quite thick in swamps. Low and often poorly defined, particularly in swamps.	Predominantly silty sand covered by a layer of organic material, thickness determined by stream activity. May be as much as 1 5 m (5 ft) thick in less turbulent streams. Mostly soft with very gradual gradient.
Wet Areas Swamps	Mostly perennial covering about 30% of reservation. Boundaries shrink in dry season but surfaces generally remain soft and wet. Interlacing networks of small channels with sluggishly flowing water usually moving toward larger streams. Often sheet drainage with channels imperceptable Numerous isolated depressions.	High water February through April. Low water June through November.	Standing water predominates over wide areas. Widths of swamps vary with high and low water periods.	Generally quite shallow water.	Movement of water generally imperceptable to quite slow. Discharge seldom measurable as water spreads over very large areas.	Swamps usually merge gradually into the higher terrain.	A thick layer of organic material, often many feet thick on top of silty sand and some sandy clay in the west. Very soft bottoms.
Reservoirs and							
Ponds 1 Pineview Lake	Approximately 32 ha (80 acres). Estimated capacity of 621,936 m³ (504 acre ft) at normal pool. Earth fill dam with corrugated metal pipe water control structure, horizontal underdrain with slide gate, vertical riser with trash rack, 1.5 m (5 ft) deep water draw and an earthen emergency overflow spillway. Dam height, 6.7 m (22 ft).		About 1,160 m (3,800 ft) long and 275 m (900 ft) wide.			Clayey sand, low and merging into swampy area at upper end.	Clayey sand overlain with some organic silt. Soft bottom.
2. Glissons Mill Pond	Approximately 27 ha (67 acres). Estimated capacity of 214,716 m <sup>3</sup> (174 acre ft) at normal pool. Earth fill dam with concrete headwall and drop spillway with two corrugated metal pipe underdrains, one with slide gate with trash rack and deep water draw, the other with riser board spillway. Earthen emergency overflow spillway. Dam height, 3 m (10 ft).		About 760 m (2,500 ft) long and 415 m (1,360 ft) wide.			Clayey sand, low and merging into swampy area at upper end.	Clayey sand overlain with some organic silt. Soft bottom.
3 Holbrook Pond	Approximately 8 ha (20 acres). Estimated capacity of 86,380 m³ (70 acre ft) at normal pool. Earth fill dam with corrugated metal pipe water control structure, horizontal underdrain, square concrete vertical riser with trash rack and deep water draw, and an earthen emergency overflow spillway. Dam height, 3.7 m (12 ft).		About 550 m (1,800 ft) long and 275 m (900 ft) wide.			Silty sand, low and merging into swampy area at upper end.	Silty sand overlain with thick layer of organic silt. Very soft bottom.
4. Canoochee Creek Lake	Approximately 332 ha (832 acres). Estimated capacity of 2,961,600 m³ (2,400 acre ft) at normal pool. Earth fill dam containing rectangular concrete box drop inlets with a total of five, 152 cm (60 in) corrugated metal pipe drains, a wooden log screen and an earthen emergency overflow spillway. Dam height, 4.6 m (15 ft).		About 6,035 m (19,800 ft) long and 730 m (2,400 ft) wide.			Silty sand, low and merging into swampy area at upper end.	Silty sand overlain with organic silt. Soft bottom.
5. Metz Range Pond	Approximately 0.6 ha (1.5 acres). Estimated capacity of 9,255 m <sup>3</sup> (7.5 acre ft) at normal pool. Earth fill dam with no control structure. Dam height, 3 7 m (12 ft).		About 135 m (440 ft) long and 115 m (380 ft) wide.			Clayey sand and low.	Clayey sand overlain with some organic silt. Soft bottom.

## B. Surface Drainage

DRAINAGE CATEGORIES	GENERAL	REGIME	WIDTHS	DEPTHS	VELOCITY AND DISCHARGE	BANKS	воттом
6. New Metz Range Pond	Approximately 15 ha (38 acres). Estimated capacity of 224,588 m³ (182 acre ft) at normal pool. Earth fill dam with corrugated metal pipe water control structure, horizontal underdrain with slide gate, vertical riser with trash rack, 5 foot deep water draw and an earthen emergency overflow spillway. Dam height, 4.6 m (15 ft).		About 575 m (1,880 ft) long and 230 m (760 ft) wide			Clayey sand, low and merging into swampy area at upper end.	Clayey sand overlain with thin layer of organic silt. Soft bottom.
7. Pond 17	Approximately 4 ha (10 acres). Estimated capacity of 32,084 m³ (26 acreft) at normal pool. Earth fill dam with corrugated metal pipe water control structure, horizontal underdrain with slide gate, vertical riser with trash rack and an earthen emergency overflow spillway. Dam height, 2.7 m (9 ft).		About 775 m (2,540 ft) long and 110 m (360 ft) wide.			Clayey sand, low and merging into swampy area at upper end	Clayey sand overlain with thick layer of organic silt. Very soft bottom.

NOTE There are 14 managed fish ponds on the reservation, some in old borrow pits. In addition, many more borrow pits are flooded or partly flooded.

\*Comprehensive stream data not available except on Canoochee River. Since analysis was done chiefly by aerial photographic interpretation, tributary streams were obscured by vegetative canopy. Spot measurements made by ground observation revealed that most tributary streams were extremely ill-defined due to swampy conditions and measurements were of limited value

# AVERAGE STREAMFLOW IN THE CANOOCHEE RIVER\* AVERAGE MONTHLY DISCHARGE IN CUBIC FEET PER SECOND 1937 to 1969

# CANOOCHEE RIVER\* FLOOD PEAKS OVER 5,000 CFS

# MOMENTARY MAXIMUM DISCHARGE (Cubic Feet Per Second)

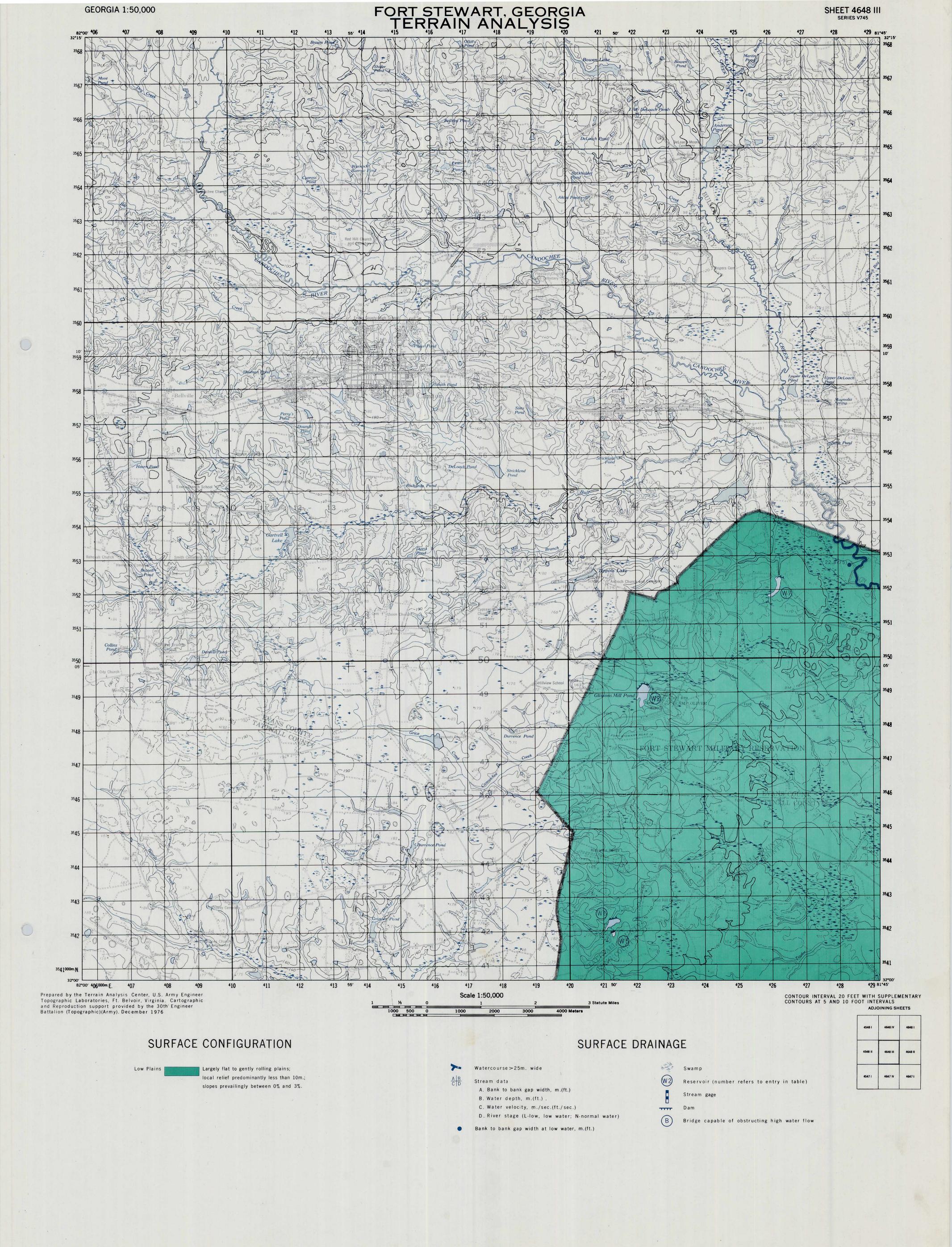
		At the Cl	axton Gage								
Month	1937-1950	1951-1960	1961-1969	1937-1969	At Proposed Dam Site	At NW Boundary of Fort Stewart	Year	Day	At Claxton Gage	At Proposed Dam Site	At NW Boundary of Fort Stewart
January	528	424	703	532	809	851	1939	23 Feb, 1 Mar	11,600	17,632	18,560
February	721	762	1,003	799	1,214	1,278	1940	16-17 Aug	7,690	11,689	12,304
March	1,104	980	1,179	1,177	1,789	1,883	1941	21 Jul	5,200	7,904	8,320
April	835	818	575	754	1,146	1,179	1944	25 Mar	9,350	14,212	14,960
May	253	365	573 519	350	532	560	1948	2 Apr	12,100	18,392	19,360
June	199	188	317	223	339	357	1953	28 Sep	8,500	12,920	13,600
July	199	164	359	221	336	354	1959	7-8 Mar	5,700	8,664	9,120
August	274	77	400	235	357	378	1960	7 Apr	6,400	9,728	10,240
September	219	237	393	262	398	419	1964	14 Jan	5,300	8,056	8,480
October	147	352	295	243	369	389	1965	19 Feb	6,800	10,366	10,880
November	245	180	2 <del>3</del> 5	178	271	286	1966	5 Mar	10,000	15,200	16,000
	462	394	239	374	568	598	1966	26 May	12,600	19,152	20,160
December						714	1969	21 May	9,000	13,680	14,400
Average	432	412	508	446	678	/14	1975	17 Apr	5,270	8,010	8,432

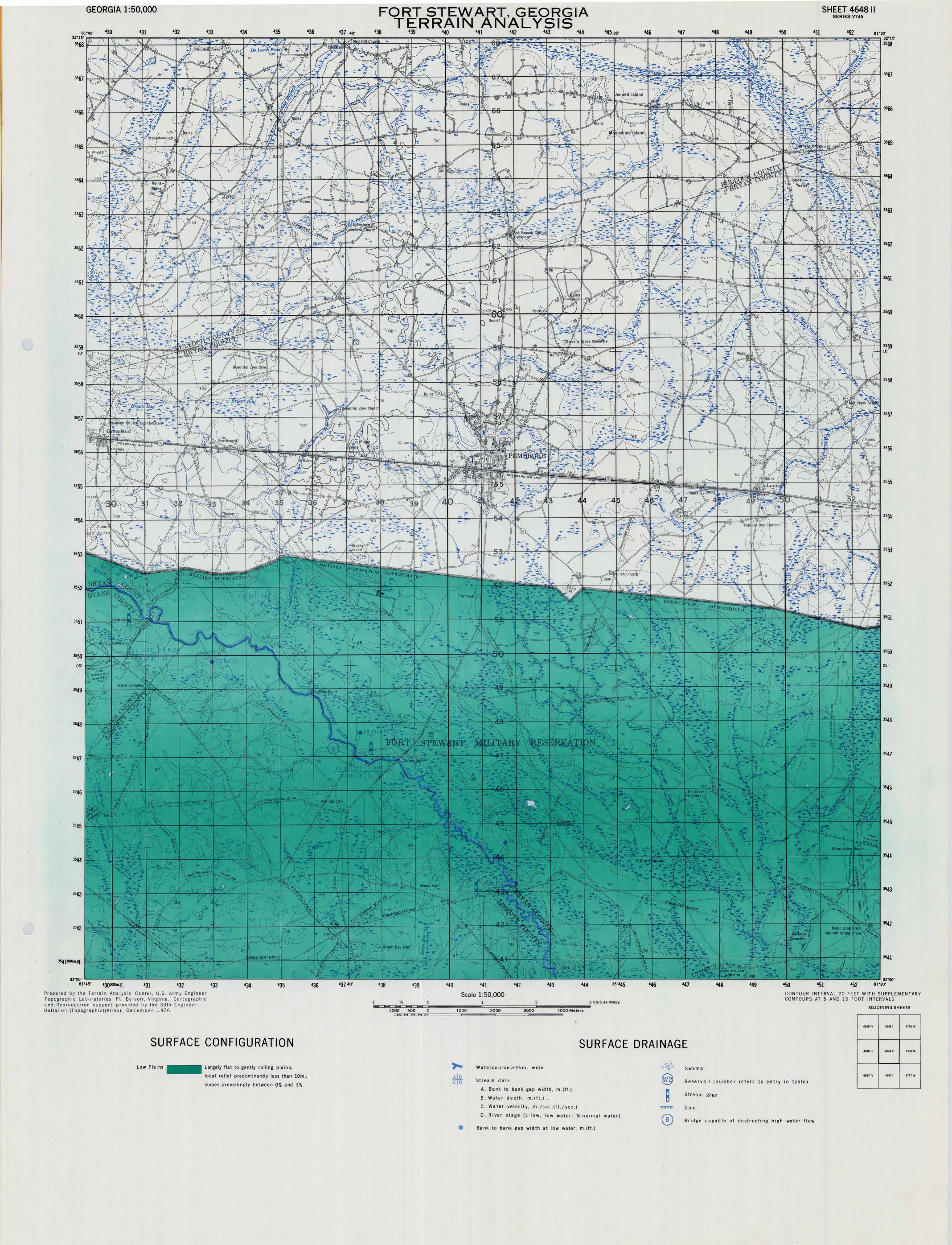
Source US Geological Survey, Water Supply Papers

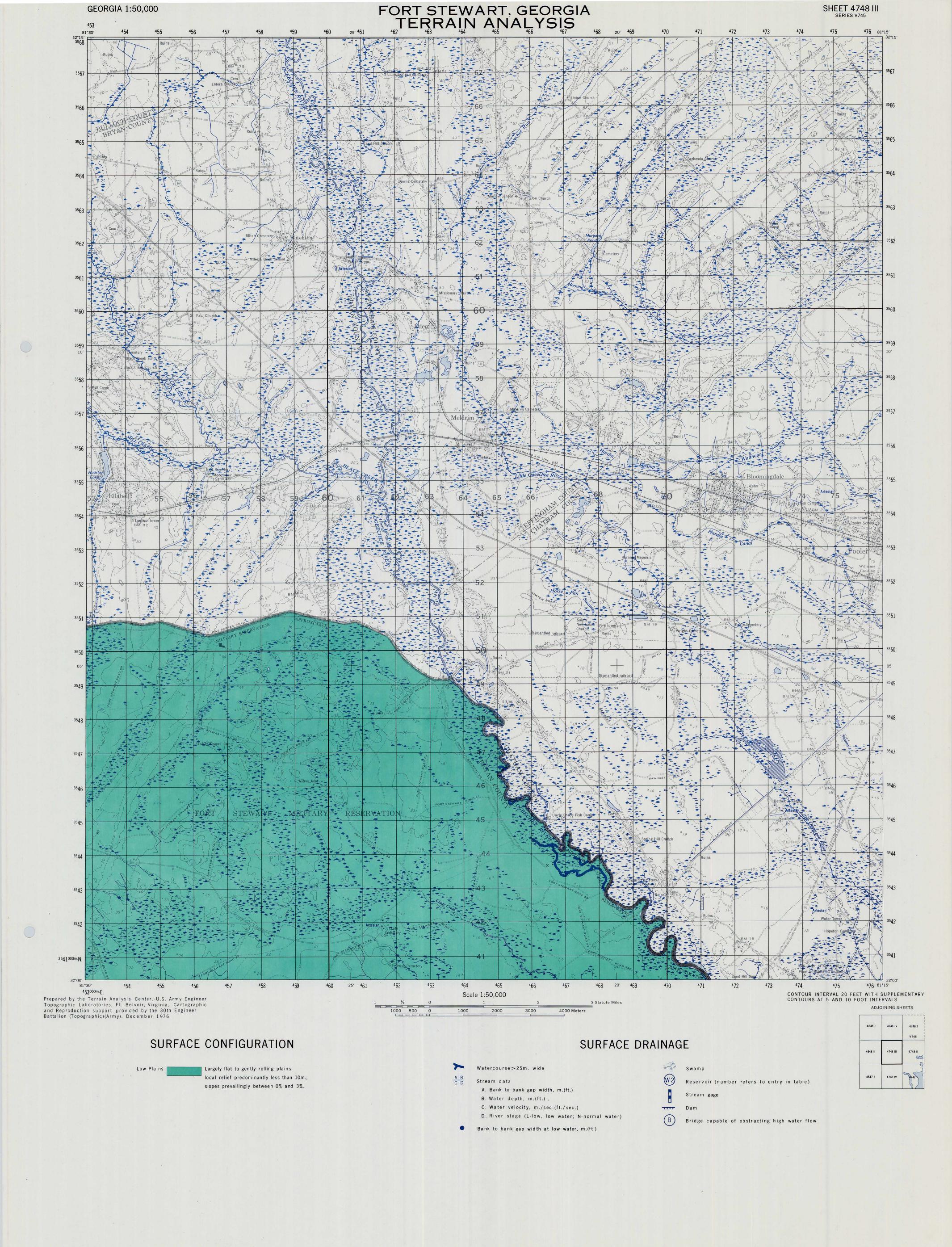
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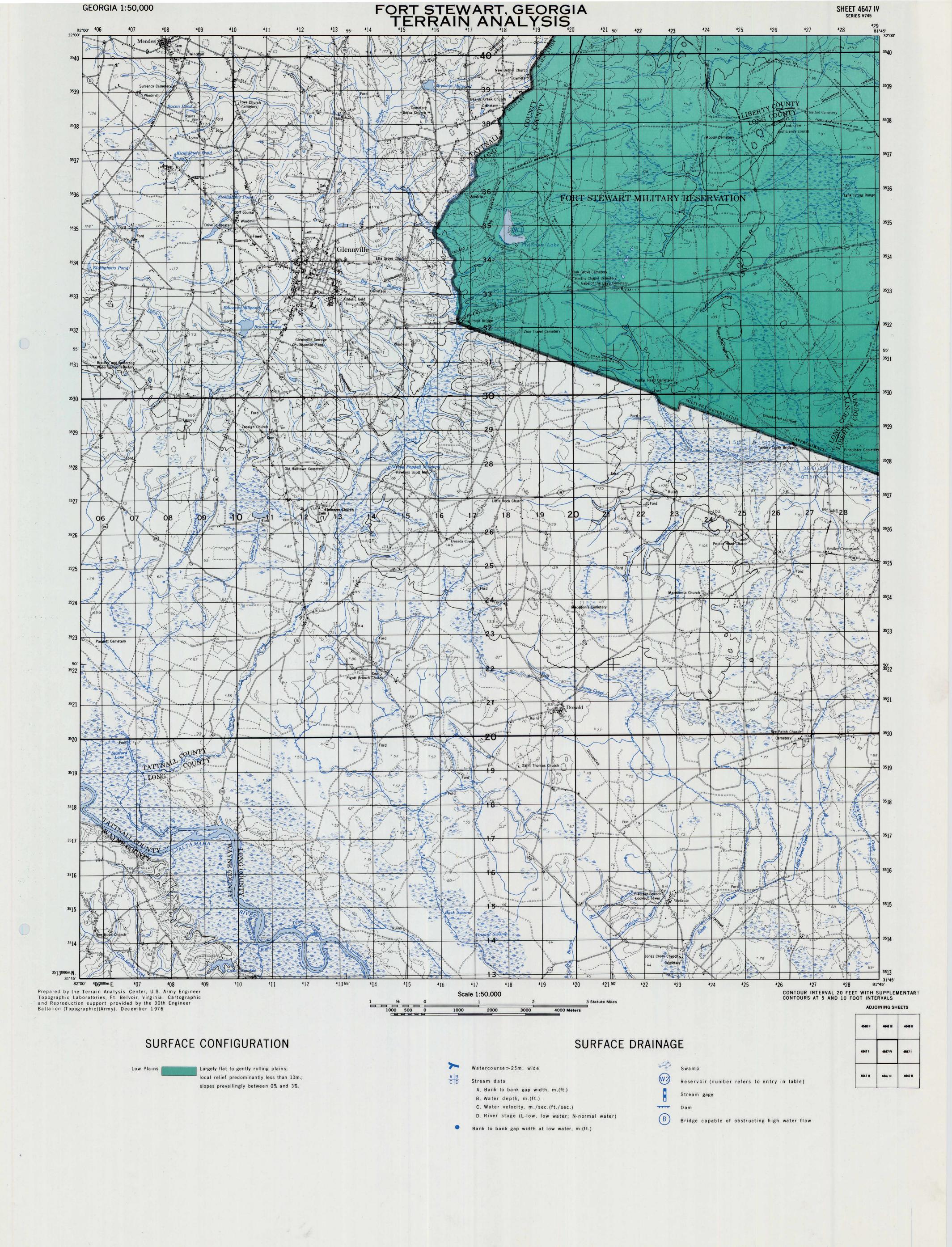
<sup>\*</sup>Tables extracted from "Groveland Lake - An Evaluation of Hydrology, Soils and Ecology" by Mayes, Sudderth and Etheredge, Inc., and published in November 1972 Proposed dam site is on the Canoochee River just below Lotts Creek. The right hand column on each table was computed by the author of this section and the discharge figures for the Fort Stewart boundary were estimated by applying the constant of 0.60 to the Claxton gage figures. The constant was derived by estimating additional discharge data below the Claxton gage.

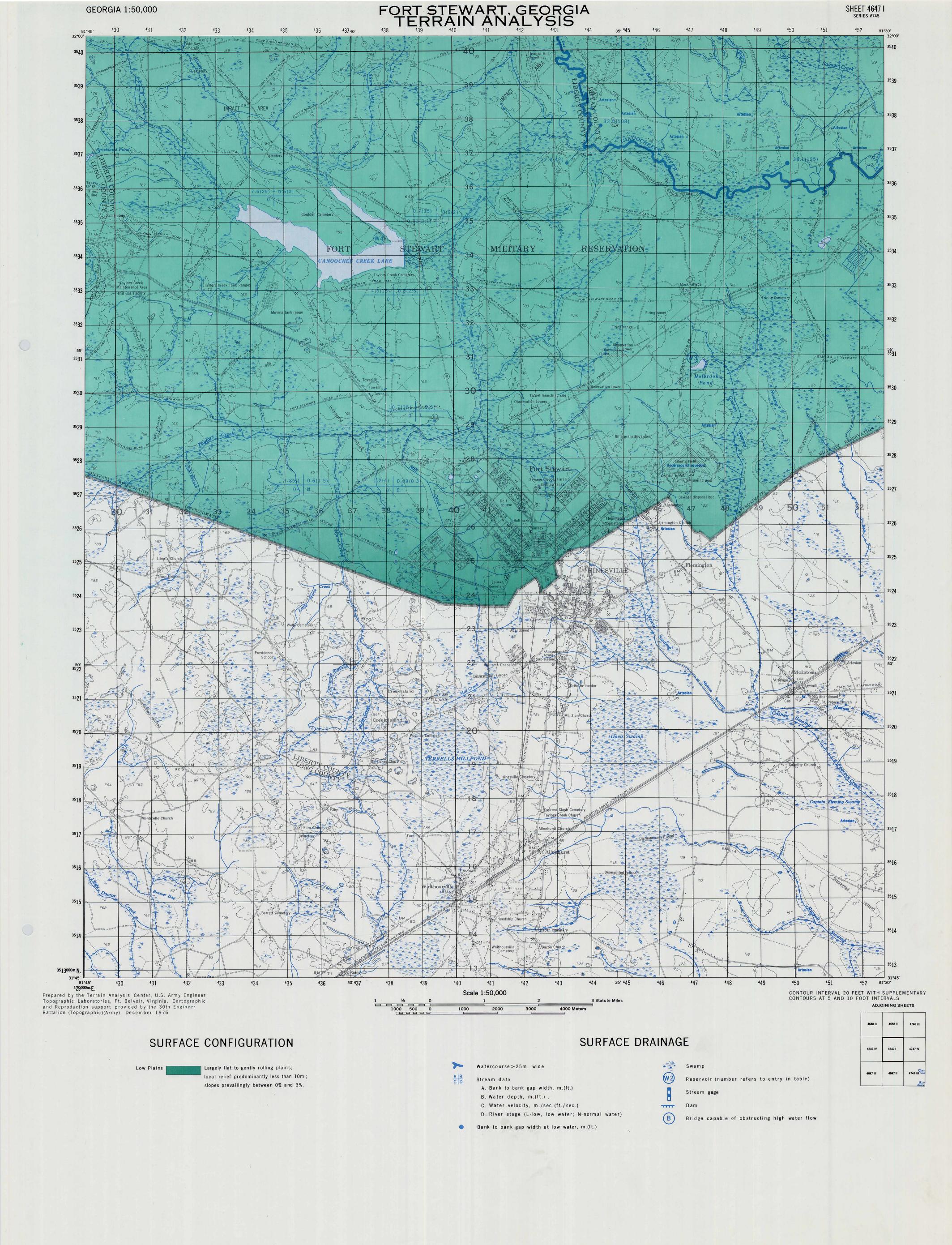
NOTE: For conversion to cubic meters per second multiply figures by 0.0283.

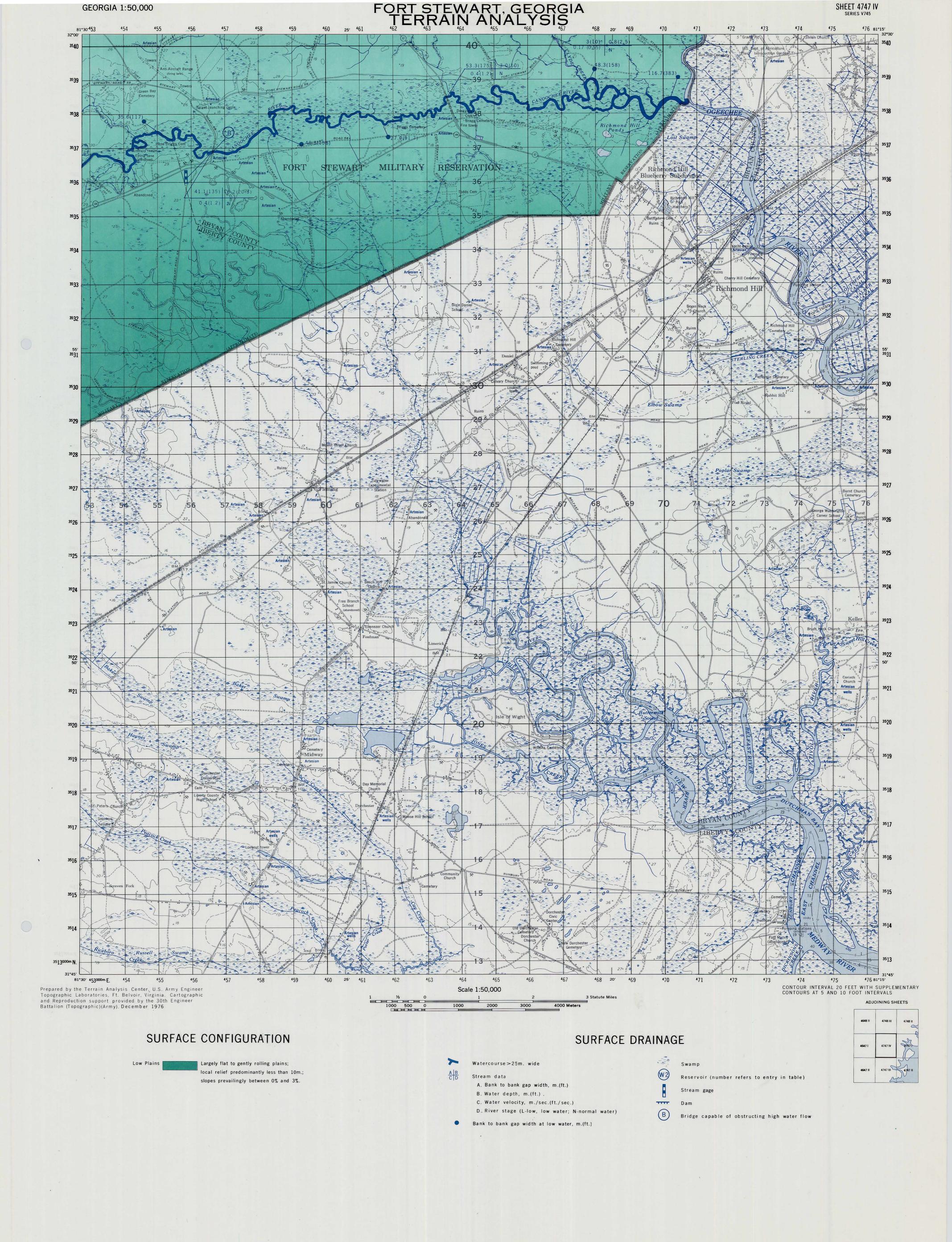












### C. Water Resources

### 1. Surface Water

Standard gaging data on the low flow of streams in the Fort Stewart Reservation are not available; however, regionally, lowest flows are expected in the fall of the year, and low flows have been reported at the Claxton gage from June through December. The categories indicated in this report are therefore subjective, and were obtained by a sequence of estimates based on a variety of miscellaneous data available.

Discharge data are available for the Canoochee River at the US Geological Survey gaging station near Claxton, Georgia, some 23.7 river kilometers (14.7 miles) north of the reservation. The minimum recorded discharge during the drought of 1954 was 24 1/s\* (0.86 ft $^3$ /sec) or 1.0 1/m/km $^2$  (0.0015 cfsm), for the water year 1974/75, the minimum discharge was 133 1/s (4.7 ft $^3$ /sec) or 5.5 1/m/km $^2$  (0.0084 cfsm). It was assumed data on runoff conditions in the drainage area above Claxton, some 1437 km $^2$  (555 mi $^2$ ), were generally representative of discharge per square kilometer of the drainage area at Fort Stewart. The discharge category was then obtained by estimating the drainage area of the streams and making a judgment of minimum flow based on some stream observations

made during April 19 and 20, 1976, toward the end of a period of unusually severe drought. In general, small streams, headwaters of streams, and multiple channels were not categorized because of the paucity of data. During the wet season of the year, and following heavy rains or hurricanes at any time, streams become swollen and all but the smallest headwaters will afford very large quantities of water (more than 4,000 liters per minute). Volumes available from ponds were arbitrarily estimated on the basis of full capacity distributed through the year without replenishment. Access to water points is generally restricted by swamps and forests. Most ready access is from existing roads bordering the water body or from bridge crossings. Sites for water points are difficult to establish in swamps and require extensive engineering effort. All waters should be treated before being used as a water supply.

Categories presented in this report are based on inadequate data and quantities should be considered as tentative estimates subject to modification as gaging data become available

effort. Pump intakes would require special protection to avoid clogging. During dry periods, it may be necessary to excavate sumps for pump intakes. During high waters, equipment may be

flooded and damaged, or destroyed.

MAP UNIT	SOURCES	QUANTITY	QUALITY	DEVELOPMENT OF SOURCES
1	The Ogeechee River flows along the eastern boundary of the reservation in a meandering course on a swampy flood plain.	Volume of water available is more than 40,000 liters per minute (1/m). During periods of high water this volume is increased many times. During periods of extreme drought when flows are drastically reduced, quantities still exceed 40,000 l/m, for example, minimum discharge for period of record is 222,600 l/m.	The Ogeechee River is of good quality, assuming no pollution from new industries that may have been established recently upstream from the reservation.	Except in a few places, access to the Ogeechee River would be restricted by swamps and forests. Banks slope gradually to the river, but in a few places are about 3 m (10 ft) high.
2	Canoochee River has a meandering course bordered by forests and except in the north, by swamps.  Canoochee Creek Lake has been created by damming Canoochee Creek.	Between 4,000 and 40,000 1/m are available in most years, however, during extended droughts, yields are in the range of 400 to 4,000 1/m.	Waters in the Canoochee River and Canoochee Creek Lake are of good quality, low in hardness and low in total dissolved solids. During periods of low water, the content of organic matter near the swampy shores of Canoochee River and in Canoochee Creek Lake may become objectionable. During extreme droughts, the water in the lake may be so low that decomposing bottom sediments may be drawn up by pumping.	Except in the north and locally elsewhere, access to the Canoochee River is restricted by swamps. In addition, forests border the river and hinder access. Banks are low and merge with the bordering swamps in many places but bordering bluffs of the river may be as much as 6 to 12 m (20 to 40 ft) high; below the confluence with Canoochee Creek, the bluff on the south bank is more than 18 m (60 ft) high. Access to Canoochee Creek Lake is restricted for the most part by forests.
3	The major tributaries of the Canoochee River Canoochee Creek, Taylors Creek, and Savage Creek and Glissons Mill Pond, New Metz Range Pond and Pineview Lake. Streams all have low gradients and are bordered by swamps. Glissons Mill and the New Metz Range Pond are on headwater tributaries of Canoochee Creek. Pineview Lake drains southwesterly out of the reservation to Beards Creek and eventually to the Altamaha River.	During most of the year, 400 to more than 4,000 1/m are available from the indicated sectors of the streams and ponds. During seasonal dry spells, yields would be reduced and are not expected to exceed 4,000 1/m; in extreme droughts, only 40 to 400 1/m would be available. Due to yearly and seasonal variations, it is not possible to delineate precisely the stream segments which yield this quantity of water.	Water in the streams and impoundments are of good quality, low in hardness and low in total dissolved solids. During periods of low water, the content of organic matter in the ponds and at the swampy margin of sluggish streams may become objectionable. During periods of extreme drought water levels in the ponds may drop so low that pumping will draw up decomposing bottom sediments.	Swamps and forests on the flood plains hinder access to the creeks except by existing roads. Banks are low and in many places merge with the swampy flood plain. Valley walls bordering the flood plain may be up to 6 m (20 ft) high on Taylors Creek, may be about 3 m (10 ft) high on Savage Creek and range from 3 m to more than 9 m (10 ft to more than 30 ft) on Canoochee Creek. Access to the ponds is restricted by forests but in places is rather easy, locally slopes may range between 5 to 10%.
4	Middle reaches of Savage Creek, selected stretches of Canoochee Creek above the lake, the channel draining Alligator Bay, an unnamed creek entering Canoochee River 3.5 km (2 mi) southeast of the Clifton Bluff bridge and Otter Hole Branch. For the most part, the streams flow through swampy and forested plains. Pond 17 has been created by damming an unnamed tributary of Canoochee River. Holbrook Pond is an artificial impoundment in the headwaters of Goshen Swamp.	Depending on size, the streams and ponds yield 40 to as much as 4,000 l/m during most of the year. During seasonal dry spells quantities may be reduced to 4 to 400 l/m. During periods of extreme drought, yields in these stream segments would range between 4 and 40 l/m. Limits of individual stream segments are indefinite and change with climatic variations.	Generally of good quality: low in hardness and low in total dissolved solids. During periods of low water, and more especially during severe droughts, quality deteriorates. At such times the water level in ponds may drop so low that decomposing bottom sediments may be drawn up by pumping. Also, the content of organic matter draining from the swamps bordering sluggish streams may become objectionable. Waters high in organic matter are dark, generally have an acid reaction, and are malodorous. All water should be treated before being used as a water supply.	Swamps and forests bordering the watercourses hinder access to the streams except along established roads In most places, banks are low and merge gradually with the surrounding swamps. During the wet season and after heavy rains, soils in forested areas are wet and may be flooded. Access to Pond 17 is easy along most of the western shore and along the northern part of the eastern shore. Access to Holbrook Pond is restricted by forest and swamp except along part of the northern shore.
5	Headwaters of streams originating as springs in the more dissected plains in the west, as ill-defined drainageways on broad low divides or as natural or artificial outlets or drainage ditches from swamps in the plains. Includes Metz Pond, an artificial impoundment on an unnamed headwater tributary of Canoochee Creek and numerous other ponds scattered all over the reservation.	During most of year, afford from 4 to 400 1/m depending on size, yields reduced in the dry period to less than 40 1/m and some streams may become dry. Linear extent and limits of individual stream segments are approximations and change with climatic variations. Headwater extensions are intermittent and have not been classified.	Waters tend to be acidic, high in organic matter and dark colored but otherwise of good quality. Acceptable for water supply after treatment. During the wet season of the year and after heavy rains at other times, quality improves. The water in Metz Pond and other small ponds tends to deteriorate more rapidly in dry periods and to be of poorer quality than the water in the flowing streams.	Access to possible water points would be difficult in the swamps and forests and relatively easy where streams cross cleared land or areas of open forest. Access to Metz Pond is generally easy, other ponds surrounded by forest or swamps.
6	Swamps with included small areas of marsh and bogs on broad flat plains or forested drainageways.	Generally 4 to 400 l/m available during most of the year. Quantities increased for short periods after heavy rainfall. During dry season, yields reduced to less than 40 l/m and some swamps may become dry.	Waters are acidic with low pH, high content of organic matter, dark color and with a disagree-able odor. Content of total dissolved solids is low and the water is suitable for use as a water supply after treatment.	Access to water points would be difficult in the wetlands. Sites for water points difficult to establish in swamps. Construction of access routes, and platforms for pumping and treatment facilities would require considerable engineering

\*1/s -- liter per second

ft<sup>3</sup>/sec -- cubic feet per second

1/m/km<sup>2</sup> -- liters per minute per square kilometer

cfsm -- cubic feet per second per square mile

The most important source of ground water at Fort Stewart is an aquifer system called the principal artesian aquifer. This is an informal name applied to a number of contiguous limestone formations which are hydraulically connected and of wide extent under the southeastern Atlantic coastal plain, (see table of geologic units below). It ranks among the largest suppliers of ground water in the United States. The water is under pressure but since the first well tapped this aquifer in 1881 in western Georgia, the pressure has been dropping. Prior to 1943 about half the wells flowed at the surface. Some flowing wells still exist and new wells favorably located may flow at the surface. However, the regional piezometric surface (pressure head) has dropped about 10.7-15.2 m (35-50 ft) in this area since artesian drilling was initiated and is now below the surface. The aquifer yields water readily and has a high coefficient of transmissibility ranging between 288,425 to 1,153,768 liters per day per meter (1pd/m) or 250,000 to 1,000,000 gallons per day per feet (gpd/ft) in this part of Georgia. On the reservation it has been calculated only for Well No. 1 in the cantonment area at 899,886 lpd/m (780,000 gpd/ft). The specific capacity of Well No. 1 was 237.7 liters per minute per meter of drawdown (206 gallons per minute per foot of drawdown). Well No. 1 at the cantonment was the first well drilled after Fort Stewart was established in November 1940. Well No. 1 and some other deep wells for which data are available are shown on the accompanying map and the specifications are presented below (see table of deep wells).

MAP UNIT

DEPTH

QUALITY

DEVELOPMENT OF SOURCES

QUANTITY AND SOURCE Large diameter wells, 45.7 cm (18 in) or more, penetrating all or several hundred feet of the principal artesian aquifer may yield up to 15,898 liters per minute (1pm) or 4,200 gallons per minute (gpm). Yields reported from Fort Stewart range from 492 - 7,646 lpm (130 - 2,020 gpm) but greater quantities could probably be obtained with larger diameter wells and pumps of greater capacity. Yields also depend upon the permeability of the aquifer, its thickness, the efficiency of the well and the drawdown. Several geologic units underlying the reservation include water-bearing beds (aquifers), see the table of geologic units below, but some of these aquifers can supply only domestic requirements. The principal artesian aquifer formerly thought to be 183 m (600 ft) thick consists of 3 to 5 water-bearing zones with an aggregate thickness of less than 60.9 m (200 ft) but only 3 have been identified at Fort Stewart. The upper zones are thicker and produce more water than the lower zones but the actual thickness must be tested at each well site. In the principal artesian aquifer, ground water occurs in the loosely consolidated beds of limestone, in cavities and in solution channels, some of which have been filled with permeable sands; the dense hard limestones between the limestone aquifers are impermeable and do not yield water. In the beds overlying the principal artesian aquifer, water occurs in the intergranular spaces of sands and gravels and in joints, fissures and other openings of impermeable rocks. Due to different conditions prevailing at the time the geologic units were deposited, the included aquifers may differ in areal extent, thickness, and water-bearing characteristics, even within short distances. Logs of selected wells at Fort Stewart are reproduced and show the degree of variation between wells, (see below). Yields from the principal artesian aquifer are not affected by seasonal changes but seasonal variations are reflected promptly in shallow wells. The specific capacity of wells in the Fort Stewart area ranges from about 23 lpm per meter of drawdown (20 gpm per ft) for small diameter wells to 57.68 lpm per meter of drawdown (50 gpm per ft) for the larger diameter wells. Capacities of installed pumps at Fort Stewart range from 492 - 6,624 lpm (130 -1,750 gpm); that is, the pump capacity defines and limits the yield of the well.

Deep wells in the reservation range from 136.55 - 248.71 m (448 - 816 ft) in depth. Prior to 1944, wells drilled in the Atlantic coastal plain of Georgia for artesian water ranged in depth from 30.48 - 472.4 m (100 - 1,550 ft) but by 1944 wells in use did not exceed 335.28 m (1,100 ft) in depth.

The depth to the top of the principal artesian aquifer from the surface ranges from about 91.44 m (300 ft) along the eastern boundary of the reservation to as much as 182.88 m (600 ft) in places near the western boundary. However, in practice, the productive horizon of the aquifer depends on conditions within the geologic formation which controls the depth at which the water is obtained. Authorities state that all or most of the aquifer must be penetrated to obtain maximum yields. Variation in water level is directly related to the amount of water pumped from the aquifer. A continuous increase in pumping causes a steady decrease in artesian pressure.

In Dec 1968, the piezometric surface in the principal artesian aquifer ranged from about 1.5 m (5 ft) below sea level on the SE border of the reservation to about 13.7 m (45 ft) above sea level near the western border. This surface drops every time an additional demand is made upon the aquifer. The pressure drop is proportional to the quantity of water removed and the distance from the point of withdrawal. For example, a withdrawal of 26,495 - 34,065 m³/d (7-9 million gallons per day) at Riceboro has caused a drop of pressure at the southern boundary of the post of approximately 1.2 m (4 ft). It is not known whether any artesian wells at Fort Stewart flow at the present time.

Shallow aquifers have been tapped prior to 1940 by dug and driven wells 3.0 - 15.2 m (10 - 50 ft) deep. It is reported that water levels in these wells ranged from 0.9 - 4.26 m (3 - 14 ft) in depth during dry periods.

During seasonal wet spells the water would rise almost to the surface in the lowlands and 1.2 - 1.5 m (4-5 ft) in the higher western part. A pumping test is available for Well No. 1 which shows the drawdown during pumping and recovery rate, (see below).

Ground water is of good quality and suited for most uses. Water from the limestones of the principal artesian aquifer is treated for hardness before use in utility or laundry boilers. Elsewhere in Georgia large diameter 3.0 m (10 ft) dug wells are used to obtain soft water for boilers from shallow aquifers. Shallow aquifers may be high in iron, sulphate and nitrate. Waters are generally soft but may be hard in selected beds. Hydrogen sulfide may be present in some beds, often in the Tampa Limestone. The waters are generally free of bacterial contamination. In the principal artesian aquifer, quality has changed little since the first wells were drilled. Comparative analysis of the water from Well No. 1:

# Well No. 1 Analysis in parts per million\*

Date sampled Temperature	1/21/41 75 F°/ 23.8°C	12/8/59
Silica (SiO <sub>2</sub> )	36.0	35.0
Iron (Fe)	0.02	0.04
Calcium (Ca)	19.0	20.0
Magnesium (Mg)	9.4	8.5
Sodium (Na)	16.0	16.0
Potassium (K)	2.6	2.8
Bicarbonate (HCO <sub>3</sub> )	133.0	136.0
Carbonate	0.0	0.0
Sulfate $(SO_4)$	8.4	7.4
Chloride (Cl)	3.6	3.5
Flouride	0.4	0.6
Nitrate (NO <sub>3</sub> )	0.0	0.2
Dissolved solids	152.0	161.0
(sum)		
Dissolved solids		166.0
(Residue at 180°C)		
Hardness as CaCO <sub>3</sub> :		
Ca-Mg	86.0	85.0
Non-carbonate		0.0
Specific conduc-		233.0
tance (micromhos		
at 25°C)		
рН		7.8

\*For the practical purposes of this analysis, parts per million and milligrams per liter may be considered equivalent.

--- Not reported.

Studies in the vicinity of Savannah indicate that chloride content and hardness are a problem in the lower permeable zone of the aquifer. That is thought to be salty water of an earlier age that has not been flushed out of the aquifer.

Due to the proximity of the reservation to the coast, intrusion of marine salt water into the aquifer is a possibility. If present withdrawals from the aquifer are sharply increased, the chloride content should be monitored to warn of possible salt water contamination.

Access to well drilling sites is restricted by forests and swamps. Well sites in swamps would entail considerable engineering effort for the construction of stable drilling platforms for deep well drilling. Wells may be driven, dug, jetted or drilled by cable tools or rotary methods. Existing well diameters range from 5 - 60.9 cm (2 - 24 in). Most artesian wells used by private residences are 5 - 10.1 cm (2-4 in) in diameter and are constructed by the jetting method. Industrial and municipal wells are generally 15.2 cm (6 in) or larger in diameter and are constructed by the cable-tool or rotary method. Some 15.2 and 20.3 cm (6-8) in) wells have utilized the jetting method. Some special purpose dug wells are 3.0 (10 ft) or more in diameter. As much as 213 m (700 ft) of casing has been installed in some wells. Casing should be extended to and seated into limestone to prevent caving formations from falling into and clogging the well, which may reduce or stop the flow. Casing excludes undesirable waters from the well and may prevent mixing of waters from different aquifers. Mixing may contaminate desirable waters or may allow high pressure waters to escape into other aquifers instead of continuing its rise toward the surface. Wells completed in sands or other loosely consolidated formations should be screened. Wells should be drilled, developed and tested by experienced personnel to assure maximum yields. Completed wells should be sealed from contamination by surface sources.

# GENERALIZED DESCRIPTION AND WATER-BEARING PROPERTIES OF GEOLOGIC UNITS IN FORT STEWART (Modified from Counts and Donsky, 1963)

SYSTEM	SERIES	GEOLOGIC UNIT	THICKNESS (m / ft)	LITHOLOGY	WATER-BEARING PROPERTIES
Quaternary	Recent and Pleistocene	Undifferentiated swamp, river terrace, flood plain, alluvial and beach deposits.	0-30.5 / 0-100	Silt, sand and gravel.	Yield small supplies to shallow wells. Potential source of large quantities of water where sand and gravel deposits are hydrologically connected to streams.
Tertiary	Pliocene	Undifferentiated deposits	?	Sand and gravel.	As above.
		Waccamaw (?) Formation	0-13.7? / 0-45?	Blue-gray to chocolate brown sandy, silty, argillaceous marl.	No data available, not significant.
	M1 ocene	Duplin Marl	0-6.09 / 0-20	Tan to light-brown marl; some shells and clay, not much sand.	Few available data indicate small yields, not a significant source.
		Hawthorn Formation	0-128.0 / 0-420	Marl, clay, sand and limestone, interbedded with pale to dark-green phosphatic sandy clay and sandy limestone.	Upper part forms part of the upper confining bed of the principal artesian aquifer. Yields as much as 757 lpm (200 gpm) to wells from sands which are little used but are a potential source of water. Some of the water is artesian. The lower part of the Hawthorn Formation forms the upper part of the principal artesian aquifer.
		Tampa Limestone	0-39.6 / 0-130	Chiefly dolomitic limestone interbedded with yellowish-green calcareous, argillaceous sand. Thin conglomeratic unit at the base.	Upper unit of principal artesian aquifer in most places. Yields reported up to 757 lpm (200 gpm).
	01 igocene	Undifferentiated rocks includ- ing Suwannee Limestone	0-60.9 / 0-200	Loosely consolidated gray to buff limestone. Ranging from soft, chalky, and fossiliferous to dense calcitized, saccharoidal, and unfossiliferous. Dense, white sandy and cherty limestone in thin stringers.	Part of principal artesian aquifer. Yields up to 2,271 lpm (600 gpm) reported.
	Upper Eocene	Ocala Limestone, upper unit	0-47.2 / 0-155	Dull white limestone, fossiliferous, some-what calcitized, and crystalline, glaucon-itic at depth. May be thin or absent in the Fort Stewart area	Major part of principal artesian aquifer. The upper unit of the Ocala and the overlying Oligocene rocks are the most permeable parts of the aquifer. Yields of 1,893 lpm (500 gpm) to 15,898 lpm (4,200 gpm) are possible from wells penetrating the entire principal aquifer.
		Ocala Limestone, lower unit	0-85.3 / 0-280	Buff soft granular limestone. Thin layers and tongues of dense pale-blue calcitized limestone and silty, clayey limestone or marl. Glauconitic in the lower portions. In places the Ocala Limestone has not been differentiated into its upper and lower units; the undifferentiated Ocala has a thickness of about 175 m (575 ft).	
	Middle Eocene	Gosport Sand	?-121.9 / ?-400	Calcareous sand or cream-colored and white to gray dense sandy fossiliferous limestone and pale-green glauconitic marl.	Yields as much as 2,460 lpm (650 gpm) reported from thick sections of the formation. In places comprises the lowest unit of principal artesian aquifer.
		Libson Formation	3.7-123.4 / 12-405	Mostly soft limestone, white, gray, and buff, but may be massive highly calcitized or glauconitic and dolonitic in some parts of the area. Some silt, clay, and marl in eastern part of area	Variable, in places forms the lowest part of the principal artesian aquifer, elsewhere because of change in permeability, forms part of the lower confining bed.

DEEP WELLS AT FORT STEWART

MAP			DATE	WELL DIAMETER	WELL DEPTH	CASING DEPTH	AQUIFER PIERCED	WATER LEVEL + or - SURFACE	DATE	LAND SURFACE ELEVATION	YIELD	TEMPERATURE C°/F°	REMARKS
NO.	LOCATION  SW of intersection of	WELL NO.  11  LIB 1612,3,4	Nov 1940	cm/in 35.56/14	m/ft 248.7/816	m/ft 137.5/45l	m/ft 111.3/365 <sup>3</sup>	m/ft -13.1/-43 <sup>4</sup>	MEASURED Nov 1940	m/ft 25.9/85 <sup>2</sup>	1pm/gpm 6624/1750	24.16/75.54	Reported in 1944 <sup>3</sup> as 40.6 cm (16 in) yield 7570 lpm (2,000
	W. 1 St. and Wilson Ave., Fort Stewart cantonment area.	GGS 6 <sup>5</sup>											gpm). See pumping test below.
2	N of intersection of Gulick Ave. and Hero Rd; west side of road Fort Stewart canton-ment area.	21	1970	30.48/12	246.3/808	143.3/470					5299/1400		
3	SW of intersection of W. 15 St. and Wilson Ave., Fort Stewart cantonment area.	3 <sup>1</sup> 183 <sup>4</sup>	1943	30.48/12	228.6/750	132.9/436				21.6/71	5299/1400		Reported 1945 <sup>4</sup> as completed Oct 1942, 232.3 m (762 ft) cased to 132.9 m (436 ft).
4	SE of intersection of E. 12 St. and Bultman Ave., Fort Stewart cantonment area.	41	1943	30.48/12	245.4/805	133.8/439				23.9/78.5	5299/1400		Reported 1945 <sup>4</sup> as completed Nov 1942. Caved, not operating.
5	2.7 km (1.7 mi) NW of Liberty County Court- house at Hinesville, about 488 m (1,600 ft) NE Taylors Creek Rd.	LIB 160 <sup>4</sup>	Oct 1940	20.3/8	166.1/545	138.7/455		-11.3/-37	Nov 1940	26.2/86	1892.6/500		Location indefinite.
6	11.2 km (7 mi) NW of Liberty County Court- house at Hinesville, about 1,600 ft NE of Taylors Creek Rd.	GGS 66 <sup>5</sup>	Oct 1940		152.4/500					26.8/88			Location indefinite; possible misprint of 7 miles for 1.7 miles.
7	2.7 km (1.7 mi) NW of Liberty County Court- house at Hinesville, 579 m (1,900 ft) NE of Taylors Creek Rd.	LIB 162 <sup>4</sup> GGS 72 <sup>5</sup>	Dec 1940	40.6/16	201.2/650	139.3/457							Location indefinite.
8	2.7 km (1.7 mi) N of Flemington at Wright Field	1 <sup>1</sup> 182 <sup>4</sup>	Nov 1942	25.4/10	143.86/472	113.99/374		0/0	Nov 1942	13.4/44	1892.6/500		Reported 1945 <sup>4</sup> , 30.48 cm (12 in) casing to 62.8 m (206 ft), 25.4 cm (10 in) casing from 55.2 to 105.5 m (181 to 346 ft).
9	2.9 km (1.8 mi) N of Flemington at Wright Field	2 <sup>1</sup> LIB 181 <sup>3,4</sup> GGS 38 <sup>5</sup>	Oct 1942	25.4/10	154.8/508 <sup>1</sup>	119.7/3931	38.4/126	<sup>3</sup> +0.76/+2.5	Oct 1942	13.7/45	1892.6/500		Reported 1944 <sup>3</sup> as 30.49 cm (12 in), cased to 116.4 m (382 ft), yield 2,423 lpm (640 gpm). Reported 1945 <sup>4</sup> 30.48-25.4 cm (12-10 in), cased to 114.3 m (375 ft). Pumped 2,423 lpm (640 gpm) with 4.4 m (14.4 ft) drawdown.
10	NE of Taylors Creek Road near Taylors Creek Cemetery, Liberty County	LIB 186 <sup>2</sup> GGS 460 <sup>5</sup>	1955		142.6/468					15.2/50			Location indefinite.
11	Taylors Creek Main- tenance Area	J <sup>1</sup>		25.4/10	140.2/460	109.7/360					2271/600		
12	Camp Oliver	11		15.2/6	152.4/500	137.16/450					492/130		
13	Tac-X	11		15.2/6	170.7/560	122.8/403					662/175		
14	Evans Heliport	11		15.2/6							511/135		
15	About 30.4 m (100 ft) E of Clyde Consol. School, Bryan County	Bry 52 <sup>3,4</sup>	1928	7.6/3				+3.13/+10.3	Jan 1939	8.2/27		23.3/74	Location indefinite.  Between Jan 1939 and Jul  1943, water level declined  1.6 m (5.4 ft). Redrilled  in 1938.
16	2.9 km (1.85 mi) W of Roding, along new paved road, about 60.9 m (200 ft) N of paved road, Bryan County	Bry 178 <sup>4</sup>	Jan 1943	25.4/10	136.55/448	99.7/327		+4.9/+16.2	Jul 1943		4542/1200		Location indefinite.
17	2.4 km (1.5 mi) E of Roding, about 15.2 m (50 ft) N Ogeechee River (sic). Bryan County	Bry 179 <sup>4</sup>	Ju1 1943	15.2-10.2/ 6-4	137.2+/450+	99.1/325					2271/600		Location indefinite.

\*Superscripts refer to the following sources, see listing at end of study for the complete citation:

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<sup>1.</sup> Water Wells and Storage Facilities. Fort Stewart. No date.

<sup>2. &</sup>lt;u>Salt-Water Encroachment, Geology, and Ground-Water Resources of Savannah Area, Georgia and South Carolina</u>. H. B. Counts and E. Donsky. 1963.

<sup>3.</sup> Artesian Water in Southeastern Georgia with Special Reference to the Coastal Area.
M. A. Warren. 1944.

<sup>4.</sup> Artesian Water in Southeastern Georgia with Special Reference to the Coastal Area. Well Records. M. A. Warren. 1945.

<sup>5.</sup> Well Logs of the Coastal Plain of Georgia. S. M. Herrick. 1961.

#### LOGS OF SELECTED WELLS AT FORT STEWART

Logs are available for only five wells at Fort Stewart. The well number of each log refers to the well shown on the accompanying map. The descriptions of the log are as published in Georgia Geological Survey Bulletin No. 70, 1961 except for metric equivalents which have been added. Note that in the citation below, the wells are referenced also by county and Georgia Geological Survey (GGS) number. In the log description, where the top of the geological interval could not be determined from the samples, the designation In as In Miocene was used.

WELL NO. 1					
Location. 1.6 mi NW of County Courthouse at	Liberty	County	In Miocene (Undifferentiated).		
Hinesville, and about 200 yd SW of Taylors	GGS Well		Clay dark-green, silty, phosphatic	15.2- 74.6	50-245
Creek Road at Camp Stewart Owner US Government (War Department)	Elevatio	n· 91 ft	Clay pale to dark-green, somewhat indurated,		<b>55 275</b>
Owner US Government (War Department) Driller Layne-Atlantic Company			sandy, phosphatic	33.5-108.2	110-355
Drilled November 1940			Clay· dark-green, very sandy, phosphatic Sand very coarse-grained	3 0-111.2	10-365
	Thickness	Thickness	Sand fine to coarse-grained, phosphatic, lime-	1.5-112.7	5-370
	and Depth (m)	and Depth (ft)	stone, white, dense (much calcitized), very		
Pliocene to Recent (Undifferentiated)	("")	(16)	sandy, phospnatic, fossiliferous (casts and		
Sand fine to medium-grained, finely dissem-			molds of megafossils)	21.3-134.1	70-440
inated phosphatic grains	30.4- 30.4	100-100	Dolomitic limestone light-brown, saccharoidal, sandy, phosphatic	1.5.105.6	
Sand. coarse-grained, arkosic	15.2- 45 7	50-150	Limestone white to light-gray, highly cal-	1.5-135.6	5-445
In Miocene (Undifferentiated):			citized, sandy, phosphatic	4.5-140.2	15-460
Sand coarse-grained, arkosic, and clay, dark-	00 4 75 0	100	Quinqueloculina sp., Massilina sp. at 460 ft		10 100
green, silty Limestone white, sandy, phosphatic, sand and	30.4- 76.2	100-250	No samples	12.1-152.4	40-500
clay, as above	3.0- 79.2	10-260	In Upper Eocene: Jackson Group Ocala Limestone		
Clay. dark-green, silty, phosphatic	22.8-102.1	75-335	Limestone: light-gray, crystalline (much cal-		
Sand. fine to coarse-grained, phosphatic	6 0-108.2	20-335	citized), fossiliferous (bryozoan remains and		
No samples Clay: as above, dolomitic limestone, brown.	12.1-120.3	40-395	Foramını fera)	?-152.4	?-500
Clay as above, dolomitic limestone, brown, saccharoidal, sandy, phosphatic	12.1-132.5	40-435	Gypsina vesicularis, Operculinoides sp.,		
Dolomitic limestone brown, saccharoidal, sandy,	12.1-132.3	40-433	Asterocyclina sp. at 500 ft		
phosphatic, limestone, white, very sandy,			Summary.	50 4 50 A	
phosphatic	3 0-135.6	10-445	Pliocene to Recent (undifferentiated) In Miocene (undifferentiated)	59.4- 59.4 80.7-140.2	195-195 265-460
No samples	7.9-143.5	26-471	No samples	12.1-152.4	40-500
Limestone. light-gray to white, dense (much calcitized), sandy, phosphatic, fossiliferous			In upper Eocene (Ocala limestone)	?-152.4	?-500
(casts and molds of megafossils)	?-143.5	?-471	Potential Water-Bearing Zones.		
No samples	6.0-149.6	20-491	Limestone	16.7-152.4	55-500
In Oligocene (Undifferentiated)					
Limestone as above, fragments of cream lime-			WELL NO. 7		
stone, nodular (much calcitized), fossilif-			Location 1.7 mi NW of Liberty County Courthouse	Liberty Co	•
erous (Foramınıfera)	?-149.6	?-491	at Hinesville, 1,900 ft NE of Taylors Creek Road at Camp Stewart	GGS Well N	•
No samples	6.0-155.7	20-511	Owner. US Government (War Department)	Elevation	86 ft
In Upper Eocene Jackson Group. Ocala Limestone			Driller Layne-Atlantic Company		
Limestone: light-gray, saccharoidal (much			Drilled December 1940		
Calcitized). crystalline, fossilifemus				Ma	
calcitized), crystalline, fossiliferous (abundant bryozoan remains and Foraminifera)	92.9-248.7	305-816		Thickness	Thickness
	92.9-248.7	305-816		and Depth	and Depth
(abundant bryozoan remains and Foraminifera) Operculinoides sp., Gypsina globula, Asterocyclina nassauensis at 511	92.9-248.7	305-816	Pliocene to Recent (Undifferentiated)		
(abundant bryozoan remains and Foraminifera) Operculinoides sp., Gypsina globula, Asterocyclina	92.9-248.7	305-816	Sand fine-grained, phosphatic (finely dissem-	and Depth	and Depth
(abundant bryozoan remains and Foraminifera) Operculinoides sp., Gypsina globula, Asterocyclina nassauensis at 511 Amphistegina pinarensis var. at 730-750 ft Summary			Sand fine-grained, phosphatic (finely dissem- inated)	and Depth (m) 30.4- 30.4	and Depth (ft) 100-100
(abundant bryozoan remains and Foraminifera) Operculinoides sp., Gypsina globula, Asterocyclina nassauensis at 511 Amphistegina pinarensis var. at 730-750 ft Summary Pliocene to Recent (undifferentiated)	45.7- 45.7	150-150	Sand fine-grained, phosphatic (finely dissem- inated) No samples	and Depth (m) 30.4- 30.4 6.0- 36.5	and Depth (ft) 100-100 20-120
(abundant bryozoan remains and Foraminifera) Operculinoides sp., Gypsina globula, Asterocyclina nassauensis at 511 Amphistegina pinarensis var. at 730-750 ft Summary Pliocene to Recent (undifferentiated) In Miocene (undifferentiated)	45.7- 45.7 97.8-143.5	150-150 321-471	Sand fine-grained, phosphatic (finely dissem- inated) No samples Sand coarse-grained, arkosic	and Depth (m) 30.4- 30.4	and Depth (ft) 100-100
(abundant bryozoan remains and Foraminifera) Operculinoides sp., Gypsina globula, Asterocyclina nassauensis at 511 Amphistegina pinarensis var. at 730-750 ft Summary Pliocene to Recent (undifferentiated)	45.7- 45.7	150-150	Sand fine-grained, phosphatic (finely dissem- inated) No samples Sand coarse-grained, arkosic In Miocene (Undifferentiated)	and Depth (m) 30.4- 30.4 6.0- 36.5	and Depth (ft) 100-100 20-120
(abundant bryozoan remains and Foraminifera) Operculinoides sp., Gypsina globula, Asterocyclina nassauensis at 511 Amphistegina pinarensis var. at 730-750 ft Summary Pliocene to Recent (undifferentiated) In Miocene (undifferentiated) No samples	45.7- 45.7 97.8-143.5 6.0-149.6	150-150 321-471 20-491	Sand fine-grained, phosphatic (finely dissem- inated) No samples Sand coarse-grained, arkosic	and Depth (m) 30.4- 30.4 6.0- 36.5	and Depth (ft) 100-100 20-120
(abundant bryozoan remains and Foraminifera) Operculinoides sp., Gypsina globula, Asterocyclina nassauensis at 511 Amphistegina pinarensis var. at 730-750 ft Summary Pliocene to Recent (undifferentiated) In Miocene (undifferentiated) No samples In Oligocene (undifferentiated)	45.7- 45.7 97.8-143.5 6.0-149.6 ?-149.6	150-150 321-471 20-491 ?-491	Sand fine-grained, phosphatic (finely dissem- inated) No samples Sand coarse-grained, arkosic In Miocene (Undifferentiated) Clay: dark-green, sandy, phosphatic, sand, fine	and Depth (m) 30.4- 30.4 6.0- 36.5 18.8- 55.4	and Depth (ft) 100-100 20-120 62-182
(abundant bryozoan remains and Foraminifera) Operculinoides sp., Gypsina globula, Asterocyclina nassauensis at 511 Amphistegina pinarensis var. at 730-750 ft Summary Pliocene to Recent (undifferentiated) In Miocene (undifferentiated) No samples In Oligocene (undifferentiated) No samples	45.7- 45.7 97.8-143.5 6.0-149.6 ?-149.6 6.0-155.7	150-150 321-471 20-491 ?-491 20-511	Sand fine-grained, phosphatic (finely dissem- inated) No samples Sand coarse-grained, arkosic  In Miocene (Undifferentiated) Clay: dark-green, sandy, phosphatic, sand, fine to coarse-grained, arkosic Clay. dark-green, phosphatic, cherty No samples	and Depth (m) 30.4- 30.4 6.0- 36.5 18.8- 55.4	and Depth (ft) 100-100 20-120 62-182
(abundant bryozoan remains and Foraminifera) Operculinoides sp., Gypsina globula, Asterocyclina nassauensis at 511 Amphistegina pinarensis var. at 730-750 ft Summary Pliocene to Recent (undifferentiated) In Miocene (undifferentiated) No samples In Oligocene (undifferentiated) No samples In upper Eocene (Ocala limestone) Potential Water-Bearing Zones: Sand. coarse-grained	45.7- 45.7 97.8-143.5 6.0-149.6 ?-149.6 6.0-155.7 92.9-248.7	150-150 321-471 20-491 ?-491 20-511 305-816	Sand fine-grained, phosphatic (finely dissem- inated) No samples Sand coarse-grained, arkosic  In Miocene (Undifferentiated) Clay: dark-green, sandy, phosphatic, sand, fine to coarse-grained, arkosic Clay: dark-green, phosphatic, cherty No samples Dolomitic limestone light-brown, sandy, phos-	and Depth (m)  30.4- 30.4 6.0- 36.5 18.8- 55.4  29.8- 85.3 12.1- 97 5	and Depth (ft) 100-100 20-120 62-182 98-280 40-320
(abundant bryozoan remains and Foraminifera) Operculinoides sp., Gypsina globula, Asterocyclina nassauensis at 511 Amphistegina pinarensis var. at 730-750 ft Summary Pliocene to Recent (undifferentiated) In Miocene (undifferentiated) No samples In Oligocene (undifferentiated) No samples In upper Eocene (Ocala limestone) Potential Water-Bearing Zones: Sand. coarse-grained Sand. fine to coarse-grained	45.7- 45.7 97.8-143.5 6.0-149.6 ?-149.6 6.0-155.7 92.9-248.7 15.2- 45.7 6.0-108.2	150-150 321-471 20-491 ?-491 20-511 305-816 50-150 20-355	Sand fine-grained, phosphatic (finely dissem- inated)  No samples  Sand coarse-grained, arkosic  In Miocene (Undifferentiated)  Clay: dark-green, sandy, phosphatic, sand, fine to coarse-grained, arkosic  Clay. dark-green, phosphatic, cherty  No samples  Dolomitic limestone light-brown, sandy, phosphatic, interbedded limestone, gray, dense	and Depth (m)  30.4- 30.4 6.0- 36.5 18.8- 55.4  29.8- 85.3 12.1- 97 5 6.0-103.6	and Depth (ft) 100-100 20-120 62-182 98-280 40-320 20-340
(abundant bryozoan remains and Foraminifera) Operculinoides sp., Gypsina globula, Asterocyclina nassauensis at 511 Amphistegina pinarensis var. at 730-750 ft Summary Pliocene to Recent (undifferentiated) In Miocene (undifferentiated) No samples In Oligocene (undifferentiated) No samples In upper Eocene (Ocala limestone) Potential Water-Bearing Zones: Sand. coarse-grained	45.7- 45.7 97.8-143.5 6.0-149.6 ?-149.6 6.0-155.7 92.9-248.7	150-150 321-471 20-491 ?-491 20-511 305-816	Sand fine-grained, phosphatic (finely dissem- inated) No samples Sand coarse-grained, arkosic  In Miocene (Undifferentiated) Clay: dark-green, sandy, phosphatic, sand, fine to coarse-grained, arkosic Clay. dark-green, phosphatic, cherty No samples Dolomitic limestone light-brown, sandy, phos- phatic, interbedded limestone, gray, dense (much calcitized), very sandy, phosphatic	and Depth (m)  30.4- 30.4 6.0- 36.5 18.8- 55.4  29.8- 85.3 12.1- 97 5	and Depth (ft) 100-100 20-120 62-182 98-280 40-320
(abundant bryozoan remains and Foraminifera) Operculinoides sp., Gypsina globula, Asterocyclina nassauensis at 511 Amphistegina pinarensis var. at 730-750 ft Summary Pliocene to Recent (undifferentiated) In Miocene (undifferentiated) No samples In Oligocene (undifferentiated) No samples In upper Eocene (Ocala limestone) Potential Water-Bearing Zones: Sand. coarse-grained Sand. fine to coarse-grained	45.7- 45.7 97.8-143.5 6.0-149.6 ?-149.6 6.0-155.7 92.9-248.7 15.2- 45.7 6.0-108.2	150-150 321-471 20-491 ?-491 20-511 305-816 50-150 20-355	Sand fine-grained, phosphatic (finely dissem- inated) No samples Sand coarse-grained, arkosic  In Miocene (Undifferentiated) Clay: dark-green, sandy, phosphatic, sand, fine to coarse-grained, arkosic Clay. dark-green, phosphatic, cherty No samples Dolomitic limestone light-brown, sandy, phos- phatic, interbedded limestone, gray, dense (much calcitized), very sandy, phosphatic  In Oligocene (Undifferentiated)	and Depth (m)  30.4- 30.4 6.0- 36.5 18.8- 55.4  29.8- 85.3 12.1- 97 5 6.0-103.6	and Depth (ft) 100-100 20-120 62-182 98-280 40-320 20-340
(abundant bryozoan remains and Foraminifera) Operculinoides sp., Gypsina globula, Asterocyclina nassauensis at 511 Amphistegina pinarensis var. at 730-750 ft Summary Pliocene to Recent (undifferentiated) In Miocene (undifferentiated) No samples In Oligocene (undifferentiated) No samples In upper Eocene (Ocala limestone) Potential Water-Bearing Zones: Sand. coarse-grained Sand. fine to coarse-grained Limestone  WELL NO. 6	45.7- 45.7 97.8-143.5 6.0-149.6 ?-149.6 6.0-155.7 92.9-248.7 15.2- 45.7 6.0-108.2 96.0-248.7	150-150 321-471 20-491 ?-491 20-511 305-816 50-150 20-355 315-816	Sand fine-grained, phosphatic (finely dissem- inated) No samples Sand coarse-grained, arkosic  In Miocene (Undifferentiated) Clay: dark-green, sandy, phosphatic, sand, fine to coarse-grained, arkosic Clay. dark-green, phosphatic, cherty No samples Dolomitic limestone light-brown, sandy, phos- phatic, interbedded limestone, gray, dense (much calcitized), very sandy, phosphatic	and Depth (m)  30.4- 30.4 6.0- 36.5 18.8- 55.4  29.8- 85.3 12.1- 97 5 6.0-103.6	and Depth (ft) 100-100 20-120 62-182 98-280 40-320 20-340
(abundant bryozoan remains and Foraminifera) Operculinoides sp., Gypsina globula, Asterocyclina nassauensis at 511 Amphistegina pinarensis var. at 730-750 ft Summary Pliocene to Recent (undifferentiated) In Miocene (undifferentiated) No samples In Oligocene (undifferentiated) No samples In upper Eocene (Ocala limestone) Potential Water-Bearing Zones: Sand. coarse-grained Sand. fine to coarse-grained Limestone	45.7- 45.7 97.8-143.5 6.0-149.6 ?-149.6 6.0-155.7 92.9-248.7 15.2- 45.7 6.0-108.2	150-150 321-471 20-491 ?-491 20-511 305-816 50-150 20-355 315-816	Sand fine-grained, phosphatic (finely disseminated)  No samples  Sand coarse-grained, arkosic  In Miocene (Undifferentiated)  Clay: dark-green, sandy, phosphatic, sand, fine to coarse-grained, arkosic  Clay. dark-green, phosphatic, cherty  No samples  Dolomitic limestone light-brown, sandy, phosphatic, interbedded limestone, gray, dense (much calcitized), very sandy, phosphatic  In Oligocene (Undifferentiated)  Limestone as above; with fragments of limestone, white, dense (much calcitized), fossiliferous (casts of megafossils and Foraminifera)	and Depth (m)  30.4- 30.4 6.0- 36.5 18.8- 55.4  29.8- 85.3 12.1- 97 5 6.0-103.6	and Depth (ft) 100-100 20-120 62-182 98-280 40-320 20-340
(abundant bryozoan remains and Foraminifera)  Operculinoides sp., Gypsina globula, Asterocyclina nassauensis at 511  Amphistegina pinarensis var. at 730-750 ft  Summary  Pliocene to Recent (undifferentiated)  In Miocene (undifferentiated)  No samples  In Oligocene (undifferentiated)  No samples  In upper Eocene (Ocala limestone)  Potential Water-Bearing Zones:  Sand. coarse-grained  Sand. fine to coarse-grained  Limestone  WELL NO. 6  Location 7 mi NW of Liberty County Courthouse at	45.7- 45.7 97.8-143.5 6.0-149.6 ?-149.6 6.0-155.7 92.9-248.7 15.2- 45.7 6.0-108.2 96.0-248.7	150-150 321-471 20-491 ?-491 20-511 305-816 50-150 20-355 315-816	Sand fine-grained, phosphatic (finely dissemnated)  No samples  Sand coarse-grained, arkosic  In Miocene (Undifferentiated)  Clay: dark-green, sandy, phosphatic, sand, fine to coarse-grained, arkosic  Clay. dark-green, phosphatic, cherty  No samples  Dolomitic limestone light-brown, sandy, phosphatic, interbedded limestone, gray, dense (much calcitized), very sandy, phosphatic  In Oligocene (Undifferentiated)  Limestone as above; with fragments of limestone, white, dense (much calcitized), fossiliferous (casts of megafossils and Foraminifera)  Rotalia mexicana var. at 440-452 ft	and Depth (m)  30.4- 30.4 6.0- 36.5 18.8- 55.4  29.8- 85.3 12.1- 97 5 6.0-103.6  30.4-134.1	and Depth (ft) 100-100 20-120 62-182 98-280 40-320 20-340
(abundant bryozoan remains and Foraminifera) Operculinoides sp., Gypsina globula, Asterocyclina nassauensis at 511 Amphistegina pinarensis var. at 730-750 ft Summary Pliocene to Recent (undifferentiated) In Miocene (undifferentiated) No samples In Oligocene (undifferentiated) No samples In upper Eocene (Ocala limestone) Potential Water-Bearing Zones: Sand. coarse-grained Sand. fine to coarse-grained Limestone  WELL NO. 6  Location 7 mi NW of Liberty County Courthouse at Hinesville, about 1,600 ft NE of Taylors Creek Road at Camp Stewart Owner US Government (War Department)	45.7- 45.7 97.8-143.5 6.0-149.6 ?-149.6 6.0-155.7 92.9-248.7 15.2- 45.7 6.0-108.2 96.0-248.7 Liberty C GGS Well	150-150 321-471 20-491 ?-491 20-511 305-816 50-150 20-355 315-816	Sand fine-grained, phosphatic (finely disseminated)  No samples  Sand coarse-grained, arkosic  In Miocene (Undifferentiated)  Clay: dark-green, sandy, phosphatic, sand, fine to coarse-grained, arkosic  Clay. dark-green, phosphatic, cherty  No samples  Dolomitic limestone light-brown, sandy, phosphatic, interbedded limestone, gray, dense (much calcitized), very sandy, phosphatic  In Oligocene (Undifferentiated)  Limestone as above; with fragments of limestone, white, dense (much calcitized), fossiliferous (casts of megafossils and Foraminifera)	and Depth (m)  30.4- 30.4 6.0- 36.5 18.8- 55.4  29.8- 85.3 12.1- 97 5 6.0-103.6	and Depth (ft) 100-100 20-120 62-182 98-280 40-320 20-340
(abundant bryozoan remains and Foraminifera) Operculinoides sp., Gypsina globula, Asterocyclina nassauensis at 511 Amphistegina pinarensis var. at 730-750 ft  Summary Pliocene to Recent (undifferentiated) In Miocene (undifferentiated) No samples In Oligocene (undifferentiated) No samples In upper Eocene (Ocala limestone)  Potential Water-Bearing Zones: Sand. coarse-grained Sand. fine to coarse-grained Limestone  WELL NO. 6  Location 7 mi NW of Liberty County Courthouse at Hinesville, about 1,600 ft NE of Taylors Creek Road at Camp Stewart  Owner US Government (War Department) Driller: Virginia Machine and Well Company	45.7- 45.7 97.8-143.5 6.0-149.6 ?-149.6 6.0-155.7 92.9-248.7 15.2- 45.7 6.0-108.2 96.0-248.7 Liberty C GGS Well	150-150 321-471 20-491 ?-491 20-511 305-816 50-150 20-355 315-816	Sand fine-grained, phosphatic (finely disseminated)  No samples  Sand coarse-grained, arkosic  In Miocene (Undifferentiated)  Clay: dark-green, sandy, phosphatic, sand, fine to coarse-grained, arkosic  Clay. dark-green, phosphatic, cherty  No samples  Dolomitic limestone light-brown, sandy, phosphatic, interbedded limestone, gray, dense (much calcitized), very sandy, phosphatic  In Oligocene (Undifferentiated)  Limestone as above; with fragments of limestone, white, dense (much calcitized), fossiliferous (casts of megafossils and Foraminifera)  Rotalia mexicana var. at 440-452 ft  No samples  In Upper Eocene Jackson Group. Ocala Limestone	and Depth (m)  30.4- 30.4 6.0- 36.5 18.8- 55.4  29.8- 85.3 12.1- 97 5 6.0-103.6  30.4-134.1	and Depth (ft) 100-100 20-120 62-182 98-280 40-320 20-340 100-440
(abundant bryozoan remains and Foraminifera) Operculinoides sp., Gypsina globula, Asterocyclina nassauensis at 511 Amphistegina pinarensis var. at 730-750 ft Summary Pliocene to Recent (undifferentiated) In Miocene (undifferentiated) No samples In Oligocene (undifferentiated) No samples In upper Eocene (Ocala limestone) Potential Water-Bearing Zones: Sand. coarse-grained Sand. fine to coarse-grained Limestone  WELL NO. 6  Location 7 mi NW of Liberty County Courthouse at Hinesville, about 1,600 ft NE of Taylors Creek Road at Camp Stewart Owner US Government (War Department)	45.7- 45.7 97.8-143.5 6.0-149.6 ?-149.6 6.0-155.7 92.9-248.7 15.2- 45.7 6.0-108.2 96.0-248.7 Liberty C GGS Well	150-150 321-471 20-491 ?-491 20-511 305-816 50-150 20-355 315-816	Sand fine-grained, phosphatic (finely disseminated) No samples Sand coarse-grained, arkosic  In Miocene (Undifferentiated) Clay: dark-green, sandy, phosphatic, sand, fine to coarse-grained, arkosic Clay. dark-green, phosphatic, cherty No samples Dolomitic limestone light-brown, sandy, phosphatic, interbedded limestone, gray, dense (much calcitized), very sandy, phosphatic  In Oligocene (Undifferentiated) Limestone as above; with fragments of limestone, white, dense (much calcitized), fossiliferous (casts of megafossils and Foraminifera) Rotalia mexicana var. at 440-452 ft No samples  In Upper Eocene Jackson Group. Ocala Limestone. Limestone: white, rather massive, much cal-	and Depth (m)  30.4- 30.4 6.0- 36.5 18.8- 55.4  29.8- 85.3 12.1- 97 5 6.0-103.6  30.4-134.1	and Depth (ft) 100-100 20-120 62-182 98-280 40-320 20-340 100-440
(abundant bryozoan remains and Foraminifera) Operculinoides sp., Gypsina globula, Asterocyclina nassauensis at 511 Amphistegina pinarensis var. at 730-750 ft  Summary Pliocene to Recent (undifferentiated) In Miocene (undifferentiated) No samples In Oligocene (undifferentiated) No samples In upper Eocene (Ocala limestone)  Potential Water-Bearing Zones: Sand. coarse-grained Sand. fine to coarse-grained Limestone  WELL NO. 6  Location 7 mi NW of Liberty County Courthouse at Hinesville, about 1,600 ft NE of Taylors Creek Road at Camp Stewart  Owner US Government (War Department) Driller: Virginia Machine and Well Company	45.7- 45.7 97.8-143.5 6.0-149.6 ?-149.6 6.0-155.7 92.9-248.7  15.2- 45.7 6.0-108.2 96.0-248.7  Liberty C GGS Well Elevation  Thickness and Depth	150-150 321-471 20-491 ?-491 20-511 305-816  50-150 20-355 315-816  ounty No. 66 88 ft  Thickness and Depth	Sand fine-grained, phosphatic (finely disseminated) No samples Sand coarse-grained, arkosic  In Miocene (Undifferentiated) Clay: dark-green, sandy, phosphatic, sand, fine to coarse-grained, arkosic Clay. dark-green, phosphatic, cherty No samples Dolomitic limestone light-brown, sandy, phosphatic, interbedded limestone, gray, dense (much calcitized), very sandy, phosphatic  In Oligocene (Undifferentiated) Limestone as above; with fragments of limestone, white, dense (much calcitized), fossiliferous (casts of megafossils and Foraminifera) Rotalia mexicana var. at 440-452 ft No samples  In Upper Eocene Jackson Group. Ocala Limestone. Limestone: white, rather massive, much calcitized, fossiliferous (bryozoan remains,	and Depth (m)  30.4- 30.4 6.0- 36.5 18.8- 55.4  29.8- 85.3 12.1- 97 5 6.0-103.6  30.4-134.1  21.3-155.4 6.0-161.5	and Depth (ft) 100-100 20-120 62-182 98-280 40-320 20-340 100-440 70-510 20-530
(abundant bryozoan remains and Foraminifera) Operculinoides sp., Gypsina globula, Asterocyclina nassauensis at 511 Amphistegina pinarensis var. at 730-750 ft Summary Pliocene to Recent (undifferentiated) In Miocene (undifferentiated) No samples In Oligocene (undifferentiated) No samples In upper Eocene (Ocala limestone) Potential Water-Bearing Zones: Sand. coarse-grained Sand. fine to coarse-grained Limestone  WELL NO. 6  Location 7 mi NW of Liberty County Courthouse at Hinesville, about 1,600 ft NE of Taylors Creek Road at Camp Stewart Owner US Government (War Department) Driller: Virginia Machine and Well Company Drilled. October 1940	45.7- 45.7 97.8-143.5 6.0-149.6 ?-149.6 6.0-155.7 92.9-248.7  15.2- 45.7 6.0-108.2 96.0-248.7  Liberty C GGS Well Elevation	150-150 321-471 20-491 ?-491 20-511 305-816  50-150 20-355 315-816  ounty No. 66 88 ft  Thickness	Sand fine-grained, phosphatic (finely disseminated) No samples Sand coarse-grained, arkosic  In Miocene (Undifferentiated) Clay: dark-green, sandy, phosphatic, sand, fine to coarse-grained, arkosic Clay. dark-green, phosphatic, cherty No samples Dolomitic limestone light-brown, sandy, phosphatic, interbedded limestone, gray, dense (much calcitized), very sandy, phosphatic  In Oligocene (Undifferentiated) Limestone as above; with fragments of limestone, white, dense (much calcitized), fossiliferous (casts of megafossils and Foraminifera) Rotalia mexicana var. at 440-452 ft No samples  In Upper Eocene Jackson Group. Ocala Limestone. Limestone: white, rather massive, much cal-	and Depth (m)  30.4- 30.4 6.0- 36.5 18.8- 55.4  29.8- 85.3 12.1- 97 5 6.0-103.6  30.4-134.1	and Depth (ft) 100-100 20-120 62-182 98-280 40-320 20-340 100-440
(abundant bryozoan remains and Foraminifera) Operculinoides sp., Gypsina globula, Asterocyclina nassauensis at 511 Amphistegina pinarensis var. at 730-750 ft  Summary Pliocene to Recent (undifferentiated) In Miocene (undifferentiated) No samples In Oligocene (undifferentiated) No samples In upper Eocene (Ocala limestone)  Potential Water-Bearing Zones: Sand. coarse-grained Sand. fine to coarse-grained Limestone  WELL NO. 6  Location 7 mi NW of Liberty County Courthouse at Hinesville, about 1,600 ft NE of Taylors Creek Road at Camp Stewart Owner US Government (War Department) Driller: Virginia Machine and Well Company Drilled. October 1940  Pliocene to Recent (Undifferentiated):	45.7- 45.7 97.8-143.5 6.0-149.6 ?-149.6 6.0-155.7 92.9-248.7  15.2- 45.7 6.0-108.2 96.0-248.7  Liberty C GGS Well Elevation  Thickness and Depth	150-150 321-471 20-491 ?-491 20-511 305-816  50-150 20-355 315-816  ounty No. 66 88 ft  Thickness and Depth	Sand fine-grained, phosphatic (finely disseminated)  No samples  Sand coarse-grained, arkosic  In Miocene (Undifferentiated)  Clay: dark-green, sandy, phosphatic, sand, fine to coarse-grained, arkosic  Clay. dark-green, phosphatic, cherty  No samples  Dolomitic limestone light-brown, sandy, phosphatic, interbedded limestone, gray, dense (much calcitized), very sandy, phosphatic  In Oligocene (Undifferentiated)  Limestone as above; with fragments of limestone, white, dense (much calcitized), fossiliferous (casts of megafossils and Foraminifera)  Rotalia mexicana var. at 440-452 ft  No samples  In Upper Eocene Jackson Group. Ocala Limestone.  Limestone: white, rather massive, much calcitized, fossiliferous (bryozoan remains, marcroshells and Foraminifera)	and Depth (m)  30.4- 30.4 6.0- 36.5 18.8- 55.4  29.8- 85.3 12.1- 97 5 6.0-103.6  30.4-134.1  21.3-155.4 6.0-161.5	and Depth (ft) 100-100 20-120 62-182 98-280 40-320 20-340 100-440 70-510 20-530
(abundant bryozoan remains and Foraminifera) Operculinoides sp., Gypsina globula, Asterocyclina nassauensis at 511 Amphistegina pinarensis var. at 730-750 ft  Summary Pliocene to Recent (undifferentiated) In Miocene (undifferentiated) No samples In Oligocene (undifferentiated) No samples In upper Eocene (Ocala limestone)  Potential Water-Bearing Zones: Sand. coarse-grained Sand. fine to coarse-grained Limestone  WELL NO. 6  Location 7 mi NW of Liberty County Courthouse at Hinesville, about 1,600 ft NE of Taylors Creek Road at Camp Stewart Owner US Government (War Department) Driller: Virginia Machine and Well Company Drilled. October 1940  Pliocene to Recent (Undifferentiated):	45.7- 45.7 97.8-143.5 6.0-149.6 ?-149.6 6.0-155.7 92.9-248.7  15.2- 45.7 6.0-108.2 96.0-248.7  Liberty C GGS Well Elevation  Thickness and Depth	150-150 321-471 20-491 ?-491 20-511 305-816  50-150 20-355 315-816  ounty No. 66 88 ft  Thickness and Depth	Sand fine-grained, phosphatic (finely disseminated) No samples Sand coarse-grained, arkosic  In Miocene (Undifferentiated) Clay: dark-green, sandy, phosphatic, sand, fine to coarse-grained, arkosic Clay. dark-green, phosphatic, cherty No samples Dolomitic limestone light-brown, sandy, phosphatic, interbedded limestone, gray, dense (much calcitized), very sandy, phosphatic  In Oligocene (Undifferentiated) Limestone as above; with fragments of limestone, white, dense (much calcitized), fossiliferous (casts of megafossils and Foraminifera) Rotalia mexicana var. at 440-452 ft No samples  In Upper Eocene Jackson Group. Ocala Limestone Limestone: white, rather massive, much calcitized, fossiliferous (bryozoan remains, marcroshells and Foraminifera) Operculinoides floridensis, Asterocyclina sp. at 530-550 ft Asterocyclina nassauensis, Gypsina globula,	and Depth (m)  30.4- 30.4 6.0- 36.5 18.8- 55.4  29.8- 85.3 12.1- 97 5 6.0-103.6  30.4-134.1  21.3-155.4 6.0-161.5	and Depth (ft) 100-100 20-120 62-182 98-280 40-320 20-340 100-440 70-510 20-530
(abundant bryozoan remains and Foraminifera) Operculinoides sp., Gypsina globula, Asterocyclina nassauensis at 511 Amphistegina pinarensis var. at 730-750 ft Summary Pliocene to Recent (undifferentiated) In Miocene (undifferentiated) No samples In Oligocene (undifferentiated) No samples In upper Eocene (Ocala limestone) Potential Water-Bearing Zones: Sand. coarse-grained Sand. fine to coarse-grained Limestone  WELL NO. 6  Location 7 mi NW of Liberty County Courthouse at Hinesville, about 1,600 ft NE of Taylors Creek Road at Camp Stewart Owner US Government (War Department) Driller: Virginia Machine and Well Company Drilled. October 1940  Pliocene to Recent (Undifferentiated): Sand fine to medium-grained, phosphatic	45.7- 45.7 97.8-143.5 6.0-149.6 ?-149.6 6.0-155.7 92.9-248.7  15.2- 45.7 6.0-108.2 96.0-248.7  Liberty C GGS Well Elevation  Thickness and Depth	150-150 321-471 20-491 ?-491 20-511 305-816  50-150 20-355 315-816  ounty No. 66 88 ft  Thickness and Depth	Sand fine-grained, phosphatic (finely disseminated)  No samples  Sand coarse-grained, arkosic  In Miocene (Undifferentiated)  Clay: dark-green, sandy, phosphatic, sand, fine to coarse-grained, arkosic  Clay. dark-green, phosphatic, cherty  No samples  Dolomitic limestone light-brown, sandy, phosphatic, interbedded limestone, gray, dense (much calcitized), very sandy, phosphatic  In Oligocene (Undifferentiated)  Limestone as above; with fragments of limestone, white, dense (much calcitized), fossiliferous (casts of megafossils and Foraminifera)  Rotalia mexicana var. at 440-452 ft  No samples  In Upper Eocene Jackson Group. Ocala Limestone  Limestone white, rather massive, much calcitized, fossiliferous (bryozoan remains, marcroshells and Foraminifera)  Operculinoides floridensis, Asterocyclina sp. at 530-550 ft	and Depth (m)  30.4- 30.4 6.0- 36.5 18.8- 55.4  29.8- 85.3 12.1- 97 5 6.0-103.6  30.4-134.1  21.3-155.4 6.0-161.5	and Depth (ft) 100-100 20-120 62-182 98-280 40-320 20-340 100-440 70-510 20-530
(abundant bryozoan remains and Foraminifera) Operculinoides sp., Gypsina globula, Asterocyclina nassauensis at 511 Amphistegina pinarensis var. at 730-750 ft  Summary Pliocene to Recent (undifferentiated) In Miocene (undifferentiated) No samples In Oligocene (undifferentiated) No samples In upper Eocene (Ocala limestone)  Potential Water-Bearing Zones: Sand. coarse-grained Sand. fine to coarse-grained Limestone  WELL NO. 6  Location 7 mi NW of Liberty County Courthouse at Hinesville, about 1,600 ft NE of Taylors Creek Road at Camp Stewart  Owner US Government (War Department) Driller: Virginia Machine and Well Company Drilled. October 1940  Pliocene to Recent (Undifferentiated): Sand fine to medium-grained, phosphatic (finely disseminated), interbedded clay, dark- gray, lignitic, micaceous Sand very coarse-grained, rounded	45.7- 45.7 97.8-143.5 6.0-149.6 ?-149.6 6.0-155.7 92.9-248.7  15.2- 45.7 6.0-108.2 96.0-248.7  Liberty C GGS Well Elevation  Thickness and Depth (m)  24.3- 24.3 19.8- 44.1	150-150 321-471 20-491 ?-491 20-511 305-816  50-150 20-355 315-816  ounty No. 66 88 ft  Thickness and Depth (ft)	Sand fine-grained, phosphatic (finely disseminated) No samples Sand coarse-grained, arkosic  In Miocene (Undifferentiated) Clay: dark-green, sandy, phosphatic, sand, fine to coarse-grained, arkosic Clay. dark-green, phosphatic, cherty No samples Dolomitic limestone light-brown, sandy, phosphatic, interbedded limestone, gray, dense (much calcitized), very sandy, phosphatic  In Oligocene (Undifferentiated) Limestone as above; with fragments of limestone, white, dense (much calcitized), fossiliferous (casts of megafossils and Foraminifera) Rotalia mexicana var. at 440-452 ft No samples  In Upper Eocene Jackson Group. Ocala Limestone: Limestone: white, rather massive, much calcitized, fossiliferous (bryozoan remains, marcroshells and Foraminifera) Operculinoides floridensis, Asterocyclina sp. at 530-550 ft Asterocyclina nassauensis, Gypsina globula, Pseudophragmina flintensis at 550-570 ft	and Depth (m)  30.4- 30.4 6.0- 36.5 18.8- 55.4  29.8- 85.3 12.1- 97 5 6.0-103.6  30.4-134.1  21.3-155.4 6.0-161.5	and Depth (ft) 100-100 20-120 62-182 98-280 40-320 20-340 100-440 70-510 20-530
(abundant bryozoan remains and Foraminifera) Operculinoides sp., Gypsina globula, Asterocyclina nassauensis at 511 Amphistegina pinarensis var. at 730-750 ft Summary Pliocene to Recent (undifferentiated) In Miocene (undifferentiated) No samples In Oligocene (undifferentiated) No samples In upper Eocene (Ocala limestone) Potential Water-Bearing Zones: Sand. coarse-grained Sand. fine to coarse-grained Limestone  WELL NO. 6  Location 7 mi NW of Liberty County Courthouse at Hinesville, about 1,600 ft NE of Taylors Creek Road at Camp Stewart Owner US Government (War Department) Driller: Virginia Machine and Well Company Drilled. October 1940  Pliocene to Recent (Undifferentiated): Sand fine to medium-grained, phosphatic (finely disseminated), interbedded clay, dark- gray, lignitic, micaceous	45.7- 45.7 97.8-143.5 6.0-149.6 ?-149.6 6.0-155.7 92.9-248.7  15.2- 45.7 6.0-108.2 96.0-248.7  Liberty C GGS Well Elevation  Thickness and Depth (m)	150-150 321-471 20-491 2-491 20-511 305-816  50-150 20-355 315-816  ounty No. 66 88 ft  Thickness and Depth (ft)	Sand fine-grained, phosphatic (finely disseminated)  No samples  Sand coarse-grained, arkosic  In Miocene (Undifferentiated)  Clay: dark-green, sandy, phosphatic, sand, fine to coarse-grained, arkosic  Clay. dark-green, phosphatic, cherty  No samples  Dolomitic limestone light-brown, sandy, phosphatic, interbedded limestone, gray, dense (much calcitized), very sandy, phosphatic  In Oligocene (Undifferentiated)  Limestone as above; with fragments of limestone, white, dense (much calcitized), fossiliferous (casts of megafossils and Foraminifera)  Rotalia mexicana var. at 440-452 ft  No samples  In Upper Eocene Jackson Group. Ocala Limestone:  Limestone: white, rather massive, much calcitized, fossiliferous (bryozoan remains, marcroshells and Foraminifera)  Operculinoides floridensis, Asterocyclina sp. at 530-550 ft  Asterocyclina nassauensis, Gypsina globula, Pseudophragmina flintensis at 550-570 ft  Summary.  Pliocene to Recent (undifferentiated)	and Depth (m)  30.4- 30.4 6.0- 36.5 18.8- 55.4  29.8- 85.3 12.1- 97 5 6.0-103.6  30.4-134.1  21.3-155.4 6.0-161.5	and Depth (ft)  100-100 20-120 62-182  98-280 40-320 20-340  100-440  70-510 20-530  120-650
(abundant bryozoan remains and Foraminifera) Operculinoides sp., Gypsina globula, Asterocyclina nassauensis at 511 Amphistegina pinarensis var. at 730-750 ft  Summary Pliocene to Recent (undifferentiated) In Miocene (undifferentiated) No samples In Oligocene (undifferentiated) No samples In upper Eocene (Ocala limestone)  Potential Water-Bearing Zones: Sand. coarse-grained Sand. fine to coarse-grained Limestone  WELL NO. 6  Location 7 mi NW of Liberty County Courthouse at Hinesville, about 1,600 ft NE of Taylors Creek Road at Camp Stewart Owner US Government (War Department) Driller: Virginia Machine and Well Company Drilled. October 1940  Pliocene to Recent (Undifferentiated): Sand fine to medium-grained, phosphatic (finely disseminated), interbedded clay, dark- gray, lignitic, micaceous Sand very coarse-grained, rounded	45.7- 45.7 97.8-143.5 6.0-149.6 ?-149.6 6.0-155.7 92.9-248.7  15.2- 45.7 6.0-108.2 96.0-248.7  Liberty C GGS Well Elevation  Thickness and Depth (m)  24.3- 24.3 19.8- 44.1	150-150 321-471 20-491 ?-491 20-511 305-816  50-150 20-355 315-816  ounty No. 66 88 ft  Thickness and Depth (ft)  80-80 65-145	Sand fine-grained, phosphatic (finely disseminated)  No samples  Sand coarse-grained, arkosic  In Miocene (Undifferentiated)  Clay: dark-green, sandy, phosphatic, sand, fine to coarse-grained, arkosic  Clay. dark-green, phosphatic, cherty  No samples  Dolomitic limestone light-brown, sandy, phosphatic, interbedded limestone, gray, dense (much calcitized), very sandy, phosphatic  In Oligocene (Undifferentiated)  Limestone as above; with fragments of limestone, white, dense (much calcitized), fossiliferous (casts of megafossils and Foraminifera)  Rotalia mexicana var. at 440-452 ft  No samples  In Upper Eocene Jackson Group. Ocala Limestone:  Limestone: white, rather massive, much calcitized, fossiliferous (bryozoan remains, marcroshells and Foraminifera)  Operculinoides floridensis, Asterocyclina sp. at 530-550 ft  Asterocyclina nassauensis, Gypsina globula, Pseudophragmina flintensis at 550-570 ft  Summary.  Pliocene to Recent (undifferentiated)  In Miocene (undifferentiated)	and Depth (m)  30.4- 30.4 6.0- 36.5 18.8- 55.4  29.8- 85.3 12.1- 97 5 6.0-103.6  30.4-134.1  21.3-155.4 6.0-161.5	and Depth (ft)  100-100 20-120 62-182  98-280 40-320 20-340  100-440  70-510 20-530  120-650
(abundant bryozoan remains and Foraminifera) Operculinoides sp., Gypsina globula, Asterocyclina nassauensis at 511 Amphistegina pinarensis var. at 730-750 ft  Summary Pliocene to Recent (undifferentiated) In Miocene (undifferentiated) No samples In Oligocene (undifferentiated) No samples In upper Eocene (Ocala limestone)  Potential Water-Bearing Zones: Sand. coarse-grained Sand. fine to coarse-grained Limestone  WELL NO. 6  Location 7 mi NW of Liberty County Courthouse at Hinesville, about 1,600 ft NE of Taylors Creek Road at Camp Stewart  Owner US Government (War Department) Driller: Virginia Machine and Well Company Drilled. October 1940  Pliocene to Recent (Undifferentiated): Sand fine to medium-grained, phosphatic (finely disseminated), interbedded clay, dark- gray, lignitic, micaceous Sand very coarse-grained, rounded	45.7- 45.7 97.8-143.5 6.0-149.6 ?-149.6 6.0-155.7 92.9-248.7  15.2- 45.7 6.0-108.2 96.0-248.7  Liberty C GGS Well Elevation  Thickness and Depth (m)  24.3- 24.3 19.8- 44.1	150-150 321-471 20-491 ?-491 20-511 305-816  50-150 20-355 315-816  ounty No. 66 88 ft  Thickness and Depth (ft)  80-80 65-145	Sand fine-grained, phosphatic (finely disseminated)  No samples  Sand coarse-grained, arkosic  In Miocene (Undifferentiated)  Clay: dark-green, sandy, phosphatic, sand, fine to coarse-grained, arkosic  Clay. dark-green, phosphatic, cherty  No samples  Dolomitic limestone light-brown, sandy, phosphatic, interbedded limestone, gray, dense (much calcitized), very sandy, phosphatic  In Oligocene (Undifferentiated)  Limestone as above; with fragments of limestone, white, dense (much calcitized), fossiliferous (casts of megafossils and Foraminifera)  Rotalia mexicana var. at 440-452 ft  No samples  In Upper Eocene Jackson Group. Ocala Limestone:  Limestone: white, rather massive, much calcitized, fossiliferous (bryozoan remains, marcroshells and Foraminifera)  Operculinoides floridensis, Asterocyclina sp. at 530-550 ft  Asterocyclina nassauensis, Gypsina globula, Pseudophragmina flintensis at 550-570 ft  Summary.  Pliocene to Recent (undifferentiated)	and Depth (m)  30.4- 30.4 6.0- 36.5 18.8- 55.4  29.8- 85.3 12.1- 97 5 6.0-103.6  30.4-134.1  21.3-155.4 6.0-161.5	and Depth (ft)  100-100 20-120 62-182  98-280 40-320 20-340  100-440  70-510  20-530  182-182 258-440 70-510
(abundant bryozoan remains and Foraminifera) Operculinoides sp., Gypsina globula, Asterocyclina nassauensis at 511 Amphistegina pinarensis var. at 730-750 ft  Summary Pliocene to Recent (undifferentiated) In Miocene (undifferentiated) No samples In Oligocene (undifferentiated) No samples In upper Eocene (Ocala limestone)  Potential Water-Bearing Zones: Sand. coarse-grained Sand. fine to coarse-grained Limestone  WELL NO. 6  Location 7 mi NW of Liberty County Courthouse at Hinesville, about 1,600 ft NE of Taylors Creek Road at Camp Stewart  Owner US Government (War Department) Driller: Virginia Machine and Well Company Drilled. October 1940  Pliocene to Recent (Undifferentiated): Sand fine to medium-grained, phosphatic (finely disseminated), interbedded clay, dark- gray, lignitic, micaceous Sand very coarse-grained, rounded	45.7- 45.7 97.8-143.5 6.0-149.6 ?-149.6 6.0-155.7 92.9-248.7  15.2- 45.7 6.0-108.2 96.0-248.7  Liberty C GGS Well Elevation  Thickness and Depth (m)  24.3- 24.3 19.8- 44.1	150-150 321-471 20-491 ?-491 20-511 305-816  50-150 20-355 315-816  ounty No. 66 88 ft  Thickness and Depth (ft)  80-80 65-145	Sand fine-grained, phosphatic (finely disseminated) No samples Sand coarse-grained, arkosic  In Miocene (Undifferentiated) Clay: dark-green, sandy, phosphatic, sand, fine to coarse-grained, arkosic Clay. dark-green, phosphatic, cherty No samples Dolomitic limestone light-brown, sandy, phosphatic, interbedded limestone, gray, dense (much calcitized), very sandy, phosphatic  In Oligocene (Undifferentiated) Limestone as above; with fragments of limestone, white, dense (much calcitized), fossiliferous (casts of megafossils and Foraminifera) Rotalia mexicana var. at 440-452 ft No samples  In Upper Eocene Jackson Group. Ocala Limestone: Limestone: white, rather massive, much calcitized, fossiliferous (bryozoan remains, marcroshells and Foraminifera) Operculinoides floridensis, Asterocyclina sp. at 530-550 ft Asterocyclina nassauensis, Gypsina globula, Pseudophragmina flintensis at 550-570 ft Summary. Pliocene to Recent (undifferentiated) In Miocene (undifferentiated) In Miocene (undifferentiated)	and Depth (m)  30.4- 30.4 6.0- 36.5 18.8- 55.4  29.8- 85.3 12.1- 97 5 6.0-103.6  30.4-134.1  21.3-155.4  55.4- 55.4 78.6-134.1 21.3-155.4	and Depth (ft)  100-100 20-120 62-182  98-280 40-320 20-340  100-440  70-510 20-530  120-650
(abundant bryozoan remains and Foraminifera) Operculinoides sp., Gypsina globula, Asterocyclina nassauensis at 511 Amphistegina pinarensis var. at 730-750 ft  Summary Pliocene to Recent (undifferentiated) In Miocene (undifferentiated) No samples In Oligocene (undifferentiated) No samples In upper Eocene (Ocala limestone)  Potential Water-Bearing Zones: Sand. coarse-grained Sand. fine to coarse-grained Limestone  WELL NO. 6  Location 7 mi NW of Liberty County Courthouse at Hinesville, about 1,600 ft NE of Taylors Creek Road at Camp Stewart  Owner US Government (War Department) Driller: Virginia Machine and Well Company Drilled. October 1940  Pliocene to Recent (Undifferentiated): Sand fine to medium-grained, phosphatic (finely disseminated), interbedded clay, dark- gray, lignitic, micaceous Sand very coarse-grained, rounded	45.7- 45.7 97.8-143.5 6.0-149.6 ?-149.6 6.0-155.7 92.9-248.7  15.2- 45.7 6.0-108.2 96.0-248.7  Liberty C GGS Well Elevation  Thickness and Depth (m)  24.3- 24.3 19.8- 44.1	150-150 321-471 20-491 ?-491 20-511 305-816  50-150 20-355 315-816  ounty No. 66 88 ft  Thickness and Depth (ft)  80-80 65-145	Sand fine-grained, phosphatic (finely disseminated) No samples Sand coarse-grained, arkosic  In Miocene (Undifferentiated) Clay: dark-green, sandy, phosphatic, sand, fine to coarse-grained, arkosic Clay. dark-green, phosphatic, cherty No samples Dolomitic limestone light-brown, sandy, phosphatic, interbedded limestone, gray, dense (much calcitized), very sandy, phosphatic  In Oligocene (Undifferentiated) Limestone as above; with fragments of limestone, white, dense (much calcitized), fossiliferous (casts of megafossils and Foraminifera) Rotalia mexicana var. at 440-452 ft No samples  In Upper Eocene Jackson Group. Ocala Limestone. Limestone: white, rather massive, much calcitized, fossiliferous (bryozoan remains, marcroshells and Foraminifera) Operculinoides floridensis, Asterocyclina sp. at 530-550 ft Asterocyclina nassauensis, Gypsina globula, Pseudophragmina flintensis at 550-570 ft Summary. Pliocene to Recent (undifferentiated) In Miocene (undifferentiated) In Oligocene (undifferentiated) In Oligocene (undifferentiated) In Oligocene (undifferentiated)	and Depth (m)  30.4- 30.4 6.0- 36.5 18.8- 55.4  29.8- 85.3 12.1- 97 5 6.0-103.6  30.4-134.1  21.3-155.4 6.0-161.5	and Depth (ft)  100-100 20-120 62-182  98-280 40-320 20-340  100-440  70-510 20-530  182-182 258-440 70-510 20-530
(abundant bryozoan remains and Foraminifera) Operculinoides sp., Gypsina globula, Asterocyclina nassauensis at 511 Amphistegina pinarensis var. at 730-750 ft  Summary Pliocene to Recent (undifferentiated) In Miocene (undifferentiated) No samples In Oligocene (undifferentiated) No samples In upper Eocene (Ocala limestone)  Potential Water-Bearing Zones: Sand. coarse-grained Sand. fine to coarse-grained Limestone  WELL NO. 6  Location 7 mi NW of Liberty County Courthouse at Hinesville, about 1,600 ft NE of Taylors Creek Road at Camp Stewart  Owner US Government (War Department) Driller: Virginia Machine and Well Company Drilled. October 1940  Pliocene to Recent (Undifferentiated): Sand fine to medium-grained, phosphatic (finely disseminated), interbedded clay, dark- gray, lignitic, micaceous Sand very coarse-grained, rounded	45.7- 45.7 97.8-143.5 6.0-149.6 ?-149.6 6.0-155.7 92.9-248.7  15.2- 45.7 6.0-108.2 96.0-248.7  Liberty C GGS Well Elevation  Thickness and Depth (m)  24.3- 24.3 19.8- 44.1	150-150 321-471 20-491 ?-491 20-511 305-816  50-150 20-355 315-816  ounty No. 66 88 ft  Thickness and Depth (ft)  80-80 65-145	Sand fine-grained, phosphatic (finely disseminated) No samples Sand coarse-grained, arkosic  In Miocene (Undifferentiated) Clay: dark-green, sandy, phosphatic, sand, fine to coarse-grained, arkosic Clay. dark-green, phosphatic, cherty No samples Dolomitic limestone light-brown, sandy, phosphatic, interbedded limestone, gray, dense (much calcitized), very sandy, phosphatic  In Oligocene (Undifferentiated) Limestone as above; with fragments of limestone, white, dense (much calcitized), fossiliferous (casts of megafossils and Foraminifera) Rotalia mexicana var. at 440-452 ft No samples  In Upper Eocene Jackson Group. Ocala Limestone: Limestone: white, rather massive, much calcitized, fossiliferous (bryozoan remains, marcroshells and Foraminifera) Operculinoides floridensis, Asterocyclina sp. at 530-550 ft Asterocyclina nassauensis, Gypsina globula, Pseudophragmina flintensis at 550-570 ft Summary. Pliocene to Recent (undifferentiated) In Miocene (undifferentiated) In Oligocene (undifferentiated) In upper Eocene (Ocala limestone)	and Depth (m)  30.4- 30.4 6.0- 36.5 18.8- 55.4  29.8- 85.3 12.1- 97 5 6.0-103.6  30.4-134.1  21.3-155.4 6.0-161.5	and Depth (ft)  100-100 20-120 62-182  98-280 40-320 20-340  100-440  70-510 20-530  182-182 258-440 70-510 20-530

WELL NO. 10

23.7-142.6

78-468

WELL NO 9

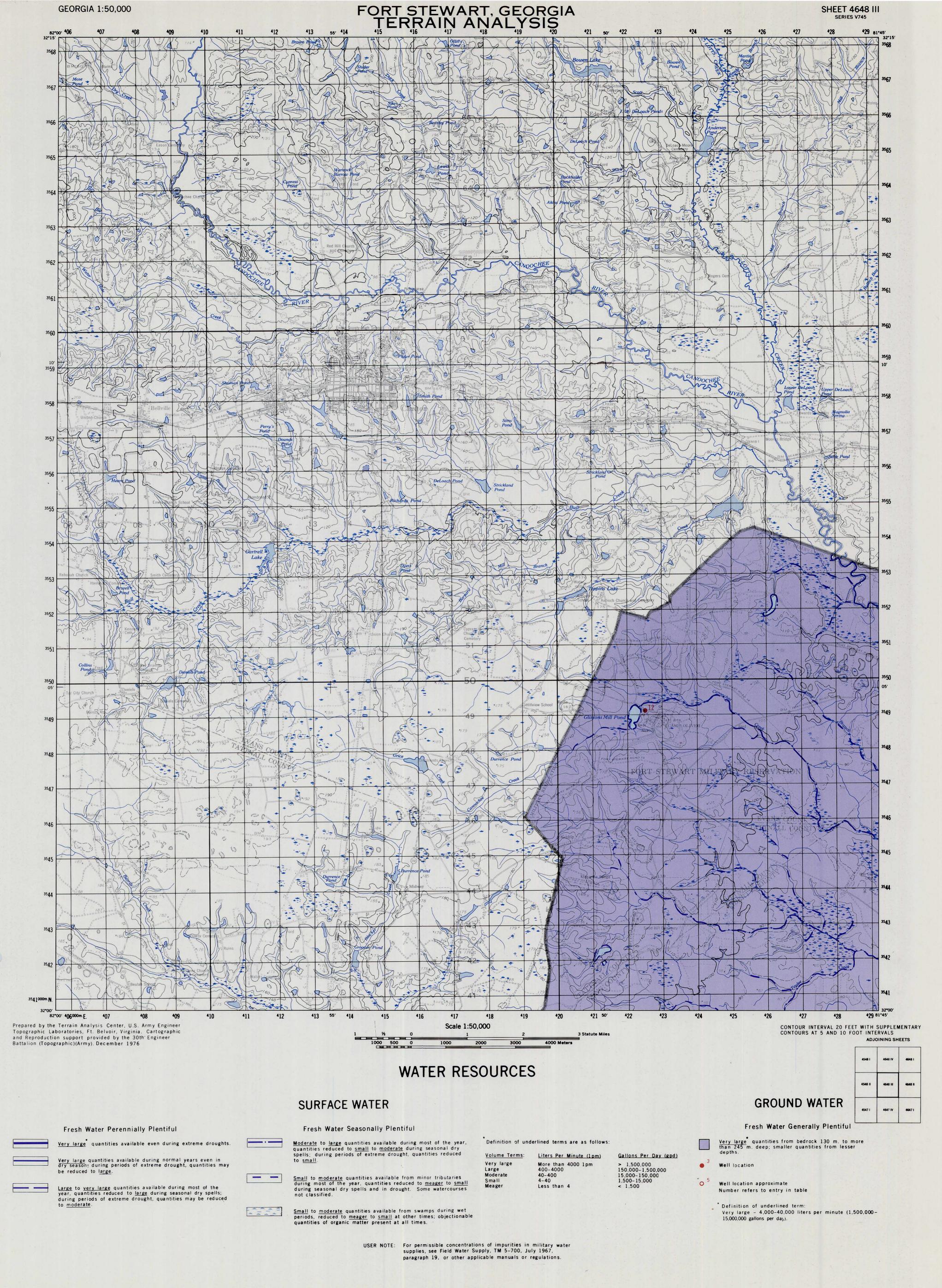
Location 1.8 mi N of Flemington, Liberty Field Liberty County Location Taylors Creek, Camp Stewart Liberty County (Camp Stewart) GGS Well No. 38 Owner US Government (War Department) GGS Well No. 460 Owner US Government (War Department) Elevation 46 ft Driller M. M. Gray Drilling Company Elevation 50 ft Driller Virginia Machine and Well Company Drilled. 1955 Thickness Drilled October 1942 Thickness Th1ckness Th1ckness and Depth and Depth and Depth and Depth (m) (ft) (m) (ft) Pliocene to Recent (Undifferentiated): Pliocene to Recent (Undifferentiated) Sand fine-grained, limonitic, interbedded Clay: blunsh-gray to red (mottled), sandy 3.0- 3.0 10- 10 clay, bluish-gray to tan to red (mottled), Clay brick-red, sandy 1.5- 4.5 5- 15 sandy 12.1- 12 1 40- 40 Sand fine to coarse-grained, arkosic; inter-Sand. coarse-grained, rounded, arkosic, bedded clay, dark-gray to black, lignitic, clay, dark-green, sandy, micaceous 30.4- 42 6 100-140 m1 caceous 7.6- 12.1 25- 40 In Miocene (Undifferentiated). Sand fine-grained, argillaceous, finely Clay. dark-green, sandy, micaceous 12.1- 54.8 40-180 disseminated phosphatic grains 1.5- 13.7 5- 45 Clay as above, interbedded limestone, light-Clay gray to bluish-gray, somewhat indurated, gray, saccharoidal (much calcitized), blocky, phosphatic (brown phosphate pebbles) 3.0- 16.7 10- 55 sandy, phosphatic 9.1- 64.0 30-210 In Miocene (Undifferentiated): Clay bluish-gray, indurated, sandy, cherty, Clay dark-green, silty, micaceous, reddishinterbedded limestone, light-gray, sacchabrown phosphatic grains 74.6- 91.4 245-300 roidal (much calcitized), sandy, phosphatic, Limestone light-gray, very sandy, phosphatic, fossiliferous (casts and impressions of fossiliferous (fragments and impressions of megafossils) 33.5- 97.5 110-320 megafossils) 2 1- 93.5 7-307 Limestone. gray to light-brown, saccharoidal Clay as above, but much sandier 14.6-108.2 48-355 (much calcitized), sandy, phosphatic, dolo-Limestone white, dense, very sandy, phosmitized at certain levels, fossiliferous phatic, interbedded dolomitic limestone, (fragments and casts of megafossils) 21.3-118.8 70-390 light-brown, saccharoidal, sandy, phosphatic 9 1-117.3 30-385 In Oligocene (Undifferentiated). In Oligocene (Undifferentiated). Limestone cream, massive, nodular (much cal-Limestone gray, very dense (much calcitized), citized), fossiliferous (Foraminifera) 6.0-124.9 20-410 sandy, fossiliferous (casts and impressions Quinqueloculina sp , Rotalia mexicana var. at of megafossils), scattered fragments of 390-400 ft porous limestone, cream, fossiliferous In Upper Eocene Jackson Group: Ocala Limestone (Foramınıfera) 7.6-124.9 25-410 Limestone. cream to white, saccharoidal (much Rotalia mexicana var. at 385-390 ft calcitized), crystalline, fossiliferous Summary (macroshells, bryozoan remains and Pliocene to Recent (undifferentiated) 55- 55 16.7- 16.7 Foraminifera) 17.6-142.6 58-468 In Miocene (undifferentiated) 100.5-117.3 330-385 Asterocyclina nassauensis, Gypsina vesicularis, 7.6-124 9 25-410 In Oligocene (undifferentiated) Operculinoides floridensis at 410-420 ft Pseudophragmina flintensis at 450-460 ft Potential Water-Bearing Zones: None observed to 410 ft Summary: Pliocene to Recent (undifferentiated) 42.6- 42.6 140-140 Remarks. In Miocene (undifferentiated) 76.2-118.8 250-390 Well reportedly reached a total depth of 508 ft In Oligocene (undifferentiated) 6.0-124.9 20-410 In upper Eocene (Ocala limestone) 17.6-142.6 58-468

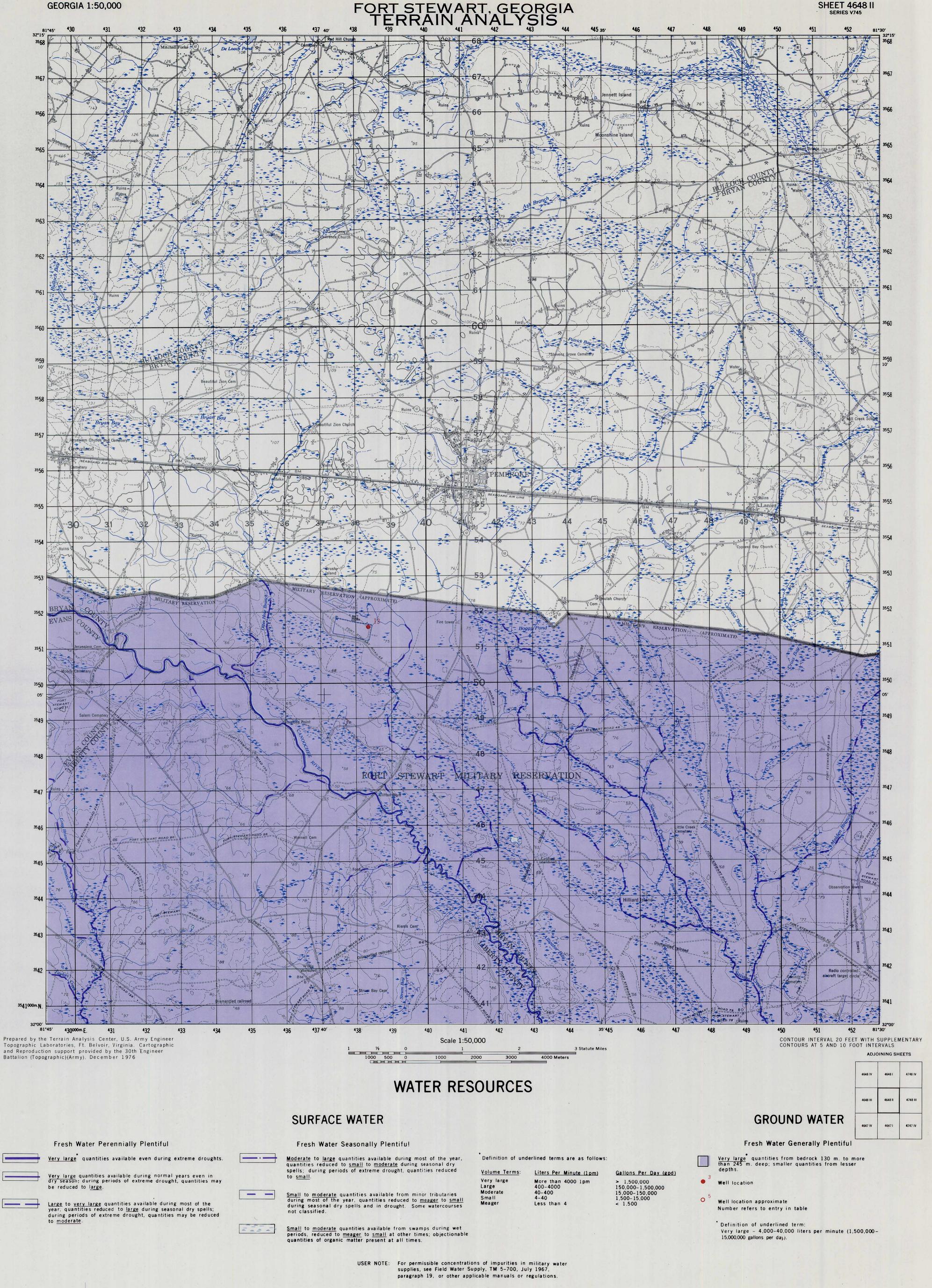
PUMPING TEST ON WELL NO. 1, FORT STEWART, GEORGIA

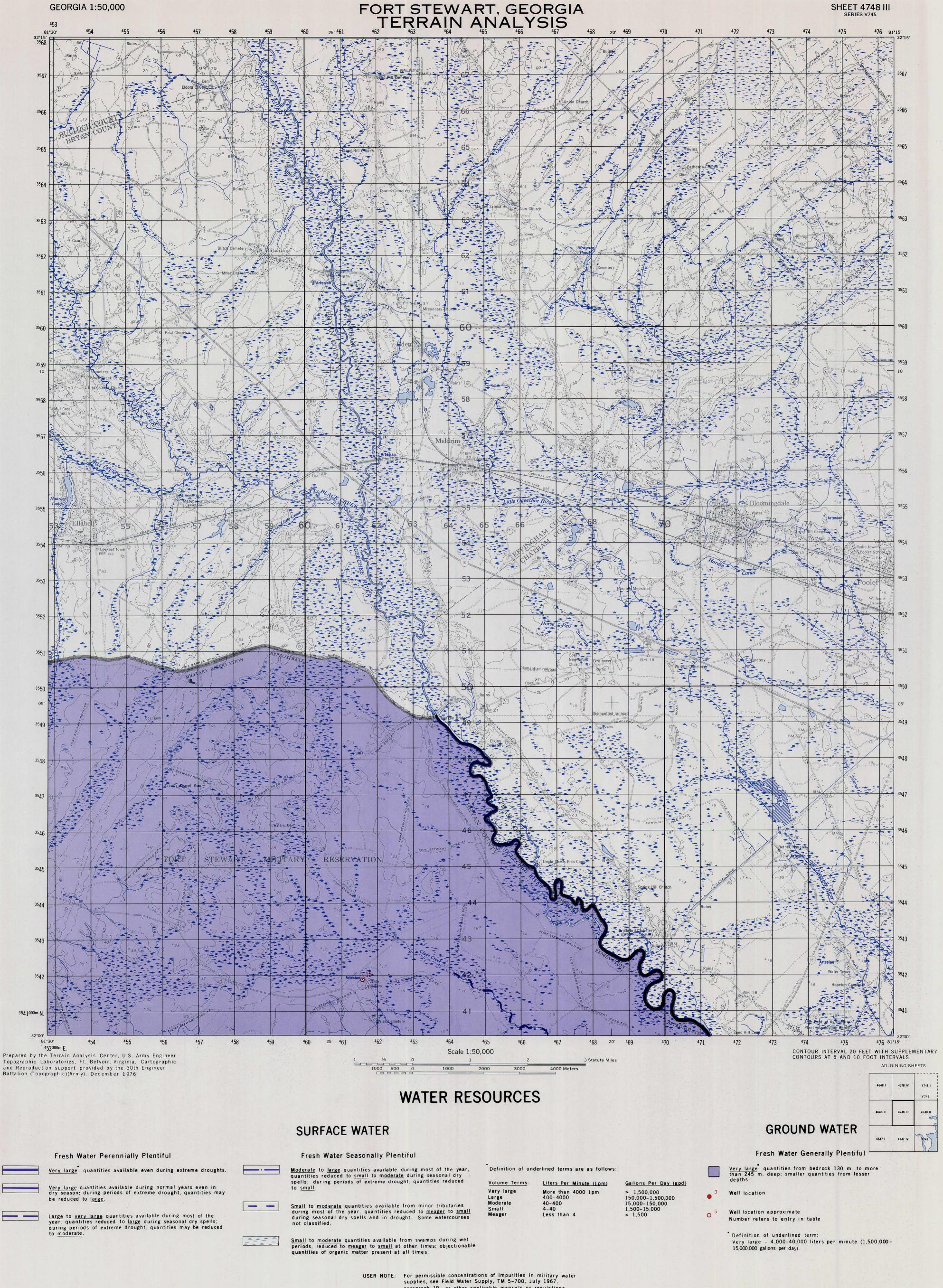
Potential Water-Bearing Zones

Limestone

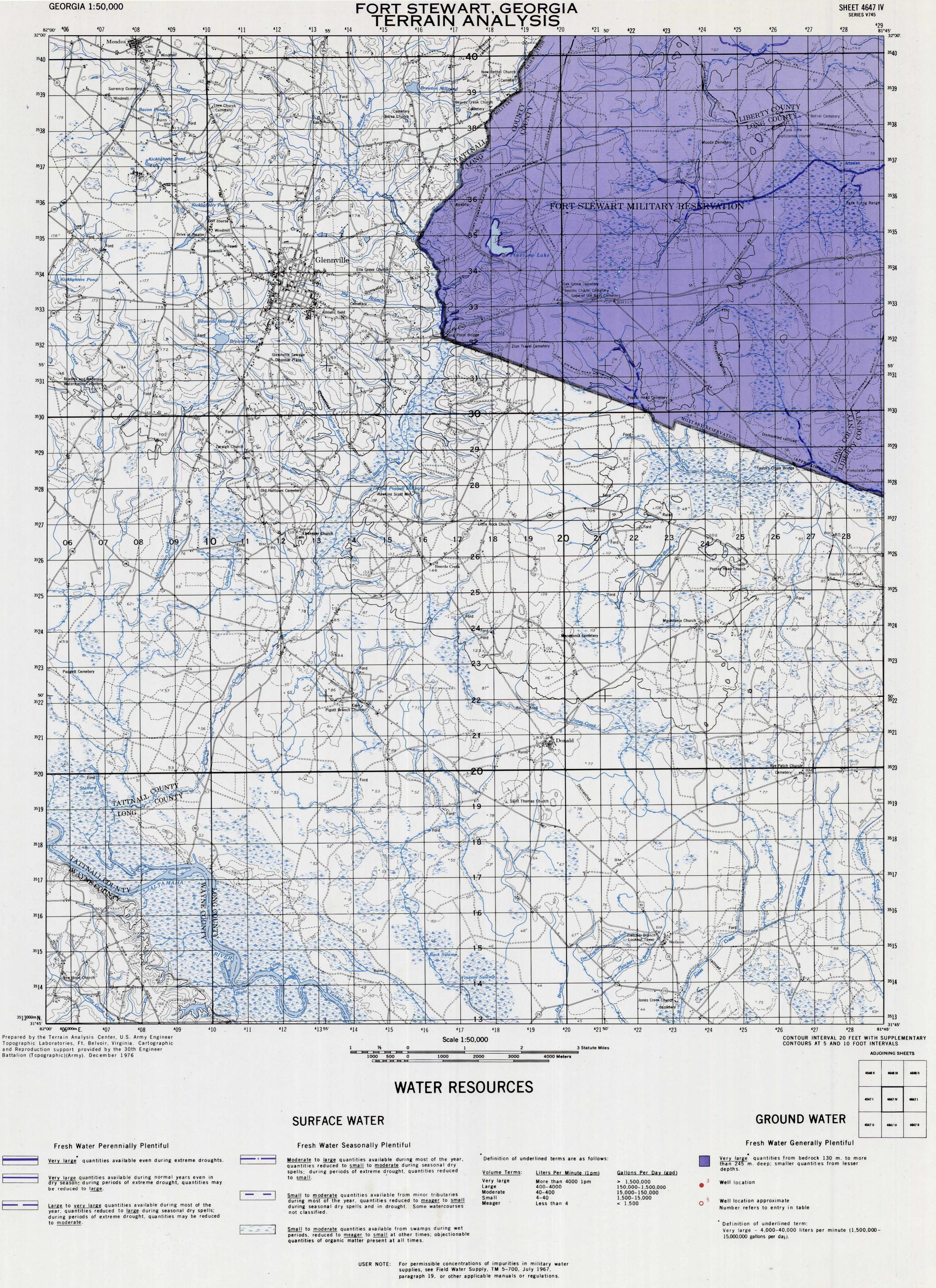
DATE	HOUR	DEPTH AND DRAWDOWN (In Meters)	DEPTH AND DRAWDOWN (In Feet)	TIMES IN MINUTES SINCE PUMPING STARTED
26 Nov 1940	10 40 a.m.	13.50	44.30	*
26 Nov 1940	11 20 a.m.	Pump started -	rate of discharge	7646.4 1/m
			(2020 gallons a min	nute)
26 Nov 1940	11 22 a.m.	15.74 - 2 24	51.65 - 7.35	2
26 Nov 1940	11.28 a.m.	15.89 - 2.39	52.16 - 7.86	8
26 Nov 1940	11.36 a.m.	15.96 - 2.45	52.37 - 8 07	16
26 Nov 1940	11 44 a.m.	16.00 - 2.50	52.51 - 8.21	24
26 Nov 1940	11 58 a.m.	16.03 - 2.53	52.61 - 8.32	38
26 Nov 1940	12.21 p.m.	16.07 - 2.57	52.74 - 8.44	61
26 Nov 1940	1:20 p.m.	16.14 - 2.63	52.96 - 8.66	120
26 Nov 1940	2 25 p.m.	16.14 - 2.64	52.98 - 8.68	185
26 Nov 1940	2.45 p.m.	16.15 - 2.65	53.00 - 8 70	205
26 Nov 1940	3 35 p m.	16.18 - 2.67	53.09 - 8.79	255
26 Nov 1940	5.00 p.m.	16.18 - 2.68	53.10 - 8.82	340
26 Nov 1940	5 23 p m.	16.19 - 2.69	53.12 - 8.84	363
27 Nov 1940	10:25 a.m	16.34 - 2.83	53.61 - 9.31	1 385
27 Nov 1940	12:00 noon	16.34 - 2.85	53.64 - 9.38	1480
27 Nov 1940	2:40 p.m.	16.35 - 2.84	53.65 - 9 35	1640
27 Nov 1940	4 35 p m.	16.36 - 2.86	53.70 - 9.40	1755
28 Nov 1940	7 55 a.m.	16.46 - 2.95	54.01 - 9.71	2675
28 Nov 1940	8 15 a.m.	16.46 - 2.96	54.02 - 9.72	2695
28 Nov 1940	8 45 a.m.	16.47 - 2.97	54 05 - 9.75	2725
28 Nov 1940	9 00 a.m	16.47 - 2.97	54.05 - 9 75	2740
28 Nov 1940	10 28 a.m.	16.47 - 2.97	54.05 - 9.75	2828
28 Nov 1940	10 31 a m	Pump stopped		
28 Nov 1940	10 34 a.m.	14.1262	46.35 - 2.05	2834
28 Nov 1940	10.37 a.m.	14.06 - 56	46.14 - 1.84	2837
28 Nov 1940	10.42 a.m.	14 0050	45.96 - 1.66	2842
28 Nov 1940	10 45 a.m.	13.9848	45.89 - 1.59	2845
28 Nov 1940	11 00 a.m.	13.91 - 41	45.66 - 1.36	2860

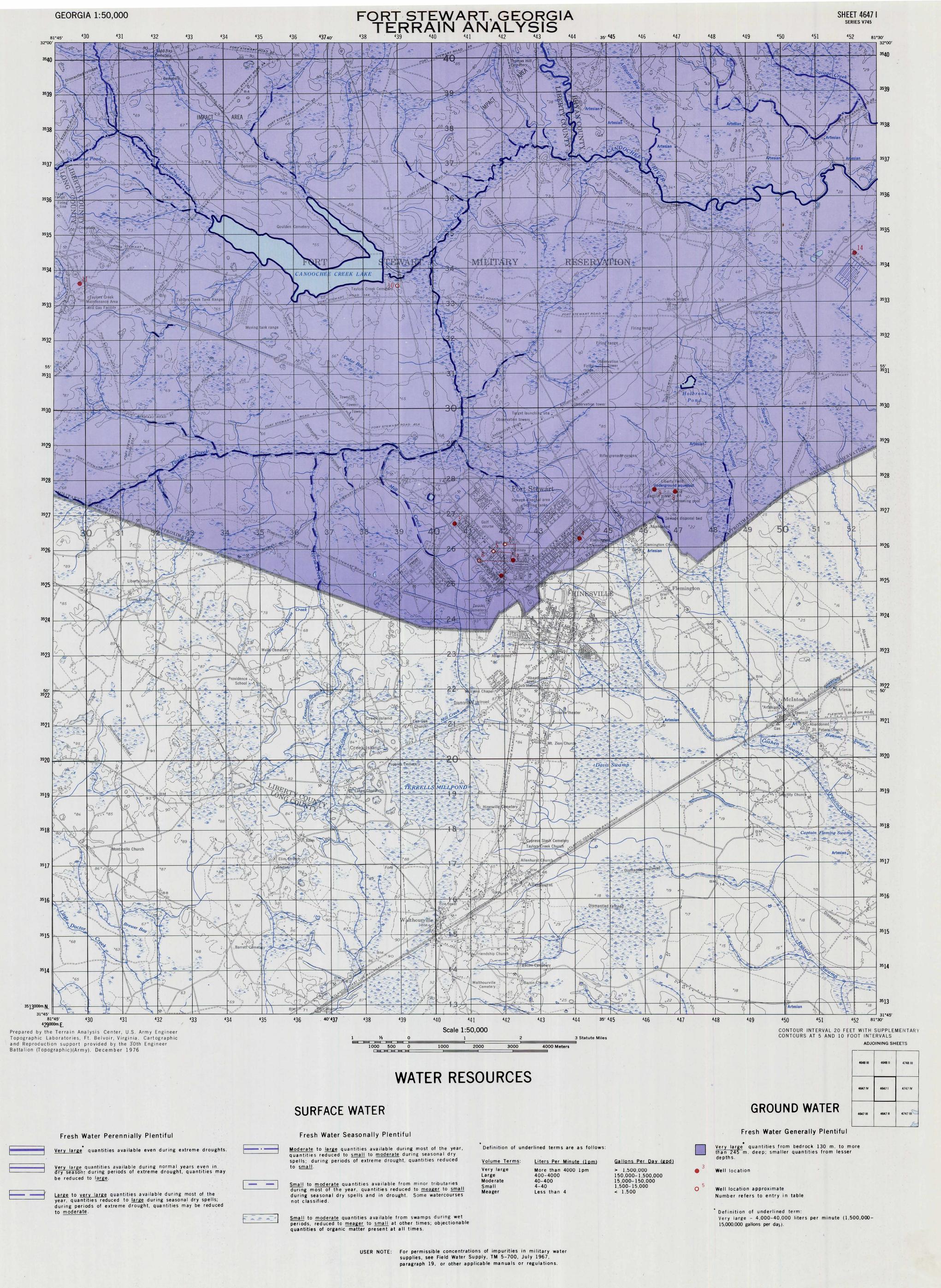


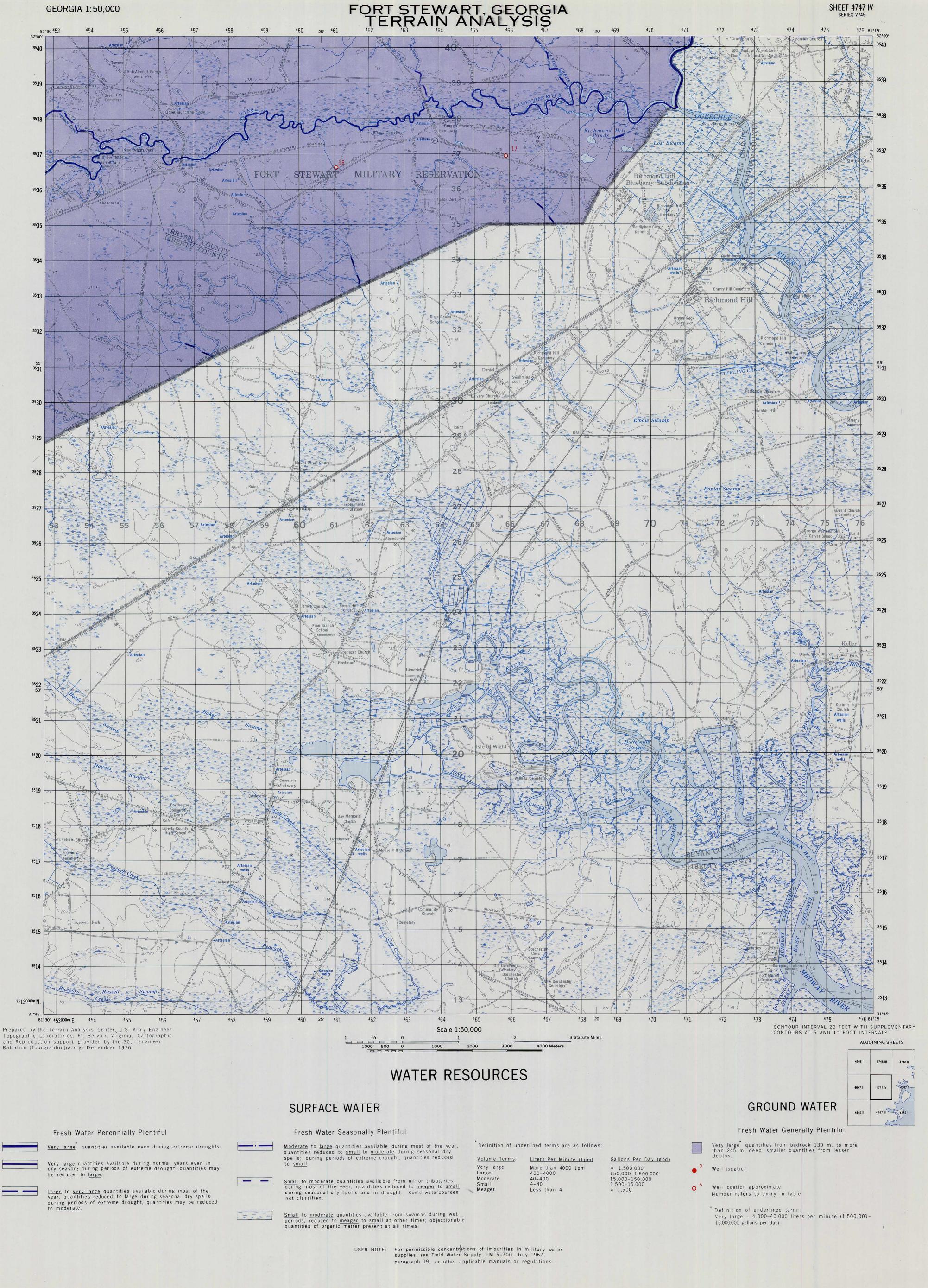




paragraph 19, or other applicable manuals or regulations.







## D. Engineering Soils

Soils on Fort Stewart range from excessively drained, almost pure sand to wet, mixed sandy to clayey sediments in swamps. All soils have developed from unconsolidated coastal plain deposits. The profile diagrams shown below depict only the surficial layer of a few meters of soil but total thickness of the soil material is many meters.

Due to the generally flat terrain and the low elevation above sea level, most soils are affected by a seasonal high water table. Duration and depth to the water table are primarily a function of local relief, vegetation and precipitation. Soils along the drains and in the depressions are additionally subject to flooding. Only Map Units 1 and 3 are essentially free of drainage problems. These two units comprise the very sandy, dune-like sands mainly north of the Canoochee River and portions of the higher lying and more dissected western third of the reservation.

Most soils on the reservation are very strongly acid (pH 4.5 - 5.0) and of low fertility. Organic matter content is typically low except for soils in swamps which contain relatively high amounts of organic material. Although at one time some of the land was cleared for cultivation, soils are best suited for timber production.

The seasonal high water table and occasional flooding imposes severe limitations to the use of most soil for engineering purposes. Generally, soil areas of Map Unit 3 are the best suited and areas of Map Unit 6 and 7 are the least suited for construction and engineering use. Very careful planning and siting is required for most areas.

The generalized engineering soils data, on the map and in the table, have been adapted from small-scale county soil association maps and from a more detailed,

published soil survey report of Bryan County, GA. These items were prepared by the Soil Conservation Service, US Department of Agriculture. Information presented here is necessarily generalized but should be helpful in land-use planning and construction operations covering large areas. For information on a specific site or otherwise small area, on-site inspection and testing are required.

The soil profile diagrams depict the representative composition and sequence of layers of the dominant soils within the map unit. Estimated thickness of layers is indicated in centimeters.

For more comprehensive information concerning kinds, distribution and properties of Fort Stewart soils, the user of this terrain study should seek the assistance of the Soil Conservation Service, US Department of Agriculture, Hinesville, GA.

			TYPICAL SOIL PROFILE - layers, thickness and color of layers, depth to rock and	WATER TABLE-	PERMEABILITY		RATING AND MAJOR KINDS OF LIMITATIONS FOR					· · · · · · · · · · · · · · · · · · ·		
MAP UNIT	MAJOR SOIL SERIES1/	LANDFORM AND SLOPE	Unified engineering classification2/. (Profile diagram not to scale)	depth and duration	cm/hr (in/hr)	SHRINK-SWELL POTENTIAL	SEWAGE LAGOONS	SEPTIC TANK FILTER FIELD	FOUNDATIONS FOR SMALL BUILDINGS	ROAD LOCATION	SHALLOW EXCAVATIONS	TRAFFICABILITY	BIVOUAC SITES	REMARKS
1	Lakeland Kershaw	Broad ridges, some dune-like, 0-8 per-cent slope.	Grayish brown poorly graded sand.  Loose when dry.  Yellowish brown to pale olive poorly graded sand.	None (excessively drained)	16.0 (6.3)	Low	Severe (p)	Slight	Slight	Slight	Moderate (s)	Moderate for wheeled vehicles. (t) (loose sand) Slight for tracked vehicles.	Moderate (t)	Restricted to north of Canoochee River and in the southwest. Sandy surface becomes fluffy when dry.  Scrub oak dominant vegetation north of Canoochee River.
2	Leon Albany Chipley	Lower portion of broad ridges; 0-4 percent slope	SM Very dark grayish brown to nearly black silty sand. Layer high in humus.  Light gray silty sand.  SP-SM Grayish brown to dark gray mixture of poorly graded sand and silty sand	15-60 cm (4-60 in) for peri- ods of 1-3 months.	5.0-16.0 (2.0-6.3)	Low	Severe (p)	Moderate (w)	Moderate (b)	Moderate (w)	Moderate (w, s)	Moderate (w, b)	Moderate (w)	Occurs scattered throughout the reservation.
3 <b>ω</b>	Tifton Fuquay Troup Dothan	Undulating uplands; 0-8 percent slope.	Dark grayish brown silty sand or mixture of poorly graded sand and silty sand, layer commonly contains many small concretions of ironstone.  Brownish yellow silty sand with concretions.  Brownish yellow clayey sand; some concretions in upper part.	None	5.0-16.0 (2.0-6.3) in upper layers; 1.6-5.0 (0.63-2.0) in lower layers.	Low	Slight	Slight	Slight	Slight	Slight	Slight	Slight	Occurs mainly in the western third of the reservation. Best soil for overall engineering use.
4	Stilson Ocilla	Very gently sloping on flats and broad ridges, 0-3 percent slope.	Dark gray to olive silty sand.  Olive yellow to pale brown clayey sand, mottled with splotches of brown, gray, olive and red.	Generally none; locally 50-75 cm (20- 30 in) after long wet spells.	5.0-16 0 (2.0-6 3) in upper layer; 1.6-5.0 (0.63-2.0) in lower layer.	Low	Slight	Moderate (w)	Moderate (b)	Slight	Slight	Slight	Slight	
5	Pelham Mascotte Leefield	Very gently sloping flats, some drains, and in depressions, 0-3 percent slope	Gray to very dark gray silty sand.  Yellowish brown to very dark gray clayey sand or clay of low plasticity, commonly with mottles.	25-50 cm (10- 60 in) for periods of 2-4 months.	1.6-5.0 (0.63-2.0)	Low	Moderate (w)	Moderate (w)	Moderate to Severe (w)	Moderate (w)	Moderate (w)	Moderate (w, b)	Moderate (w)	Extensive on the reservation.
6	Ogeechee Bladen Pooler Portsmouth Pelham	Broad, nearly level flats along some drains and in some depressions, 0-2 percent slope.	SM SP-SM SP-	Less than 30 cm (12 in) for periods of 2-6 months.	1.6-5.0 (0.63-2.0)	Low in upper layer. Low to moderate in lower layers.	Moderate to Severe (f, w)	Severe (w, f)	Severe (w, f)	Severe (w, f, b)	Severe (w, f)	Severe (w, f, b)	Severe (w, f)	Occasionally flooded.
7	Ellabelle Surrency Osier Cape Fear Bibb Angelina	Floodplains, swamps and depressions, 0-2 percent slope.	Dark gray to black silty sand.  Coarse and fine-grained soils in layers of varied sequence and thickness, sandy clay component dominates. Each soil component not everywhere present. Pockets of organic silt and organic clay occur locally in some swamps.	Less than 25 cm (12 in) for periods of 4-8 months. In swamps and depressions water at or near surface most of year.	Highly varied.	Low in surface layer but varied below 60 cm.	Severe (w, f)	Severe (w, f)	Severe (w, f)	Severe (w, f, b)	Severe (w, f)	Severe (w, f, b)	Severe (w, f, b)	Many areas prone to flooding after heavy rains or long wet spells.  Bottomland hardwoods dominant vegetation.

<sup>2/</sup>Soils that have profiles almost alike make up a soil series. The series is the common name of the soil. Each series is named for a town or other geographic feature near the place where a soil of that series was first observed and mapped. Many other minor soils are included in the map unit.

Data for the Engineering Soils Map and this table come from various sources, published and unpublished. Major source items include the following:

- (1) <u>Soil Survey of Bryan and Chatham Counties, Georgia</u>. Soil Conservation Service, US Department of Agriculture in cooperation with the University of Georgia, College of Agriculture, Agricultural Experiment Stations. March 1974.
- (2) Unpublished general soil association maps and accompanying data for the counties of Liberty, Long, Tattnall and Evans, Georgia. Soil Conservation Service, US Department of Agriculture.
- (3) Unpublished soil survey field sheets for Tattnall and Evans Counties, Georgia. Soil Conservation Service, US Department of Agriculture (will soon be published).

### DEFINITION OF RATING TERMS

Slight - relatively free of limitations or limitations are easily overcome.

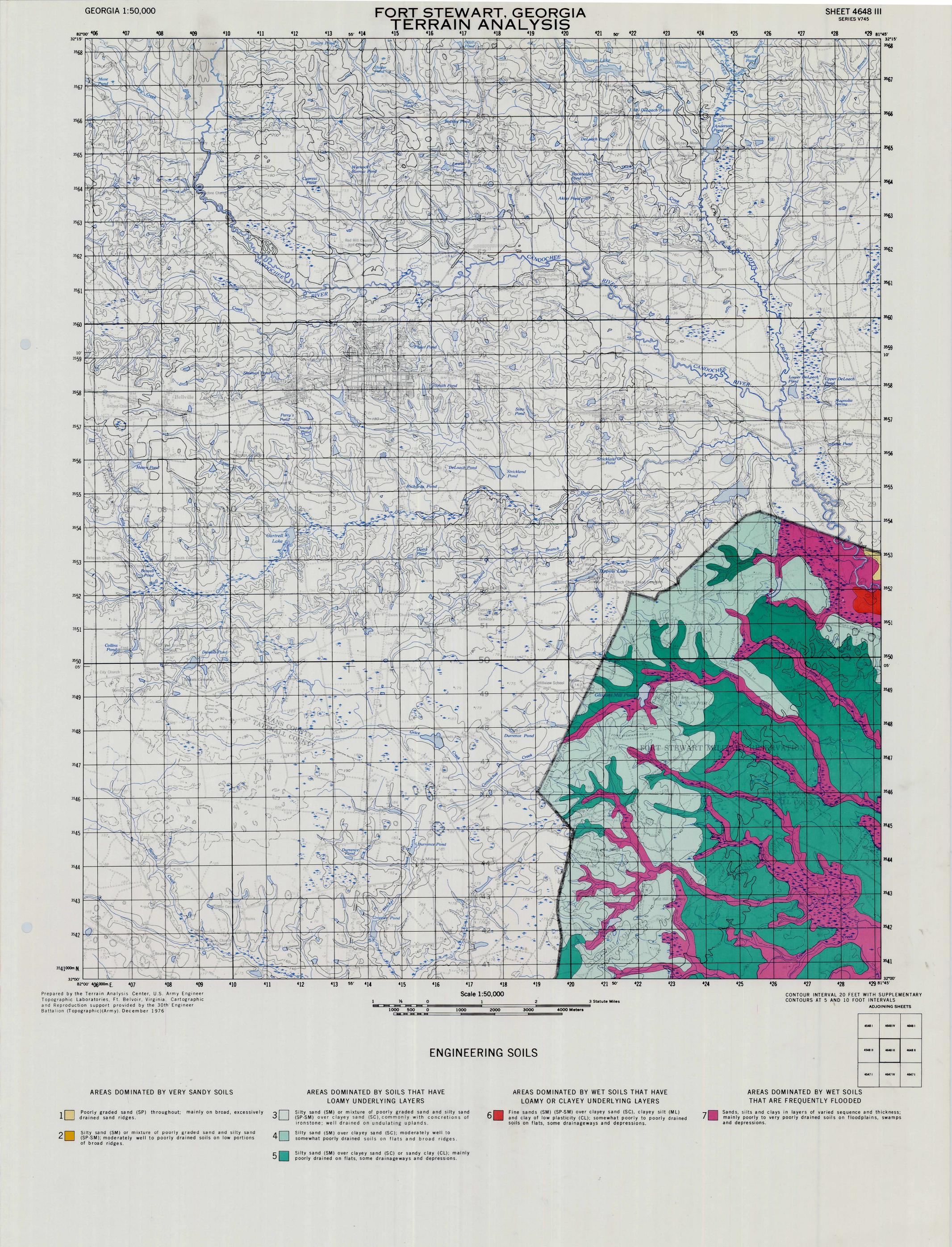
Moderate - limitations can be overcome with good planning and/or careful design.

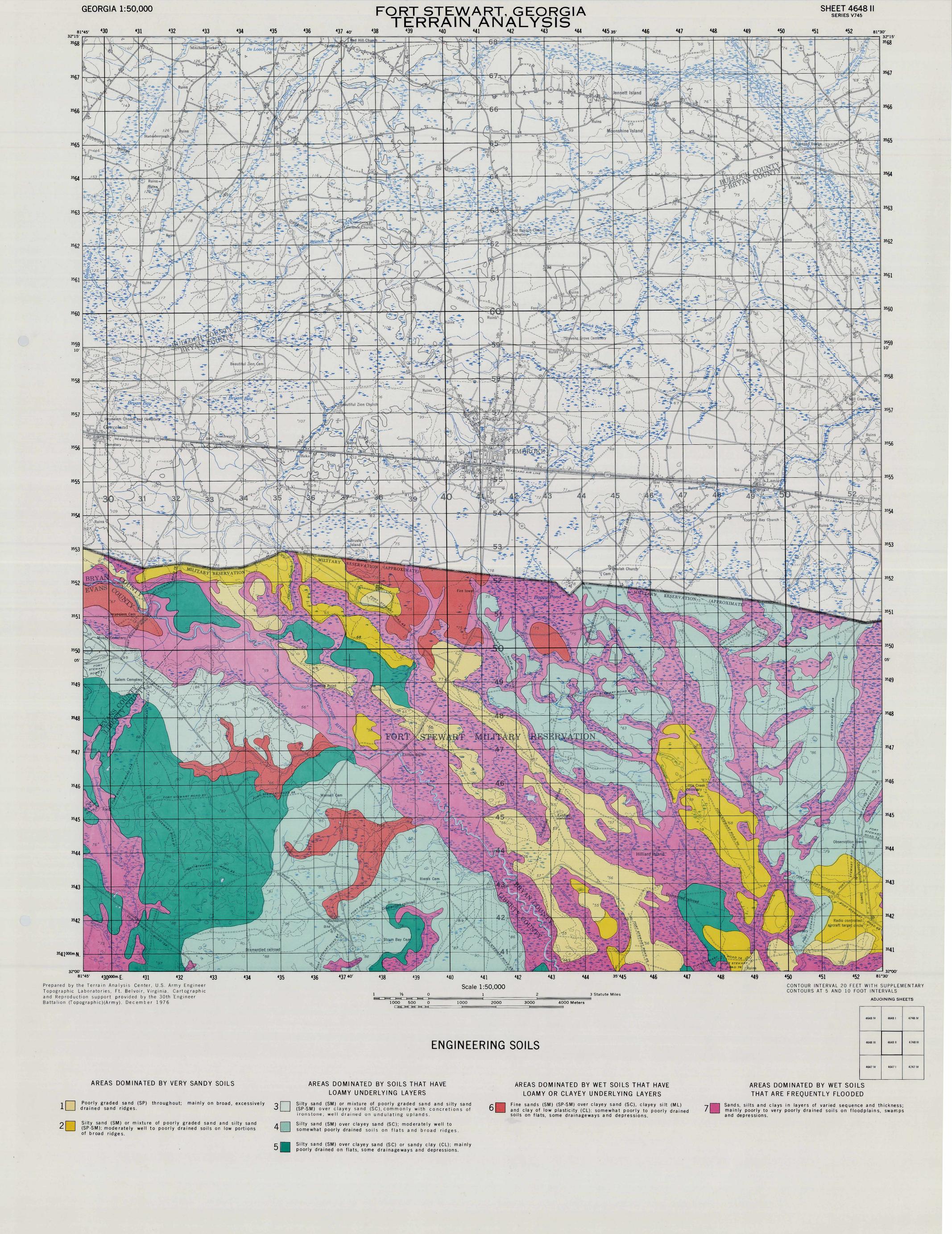
Severe - limitations are serious and are difficult to overcome.

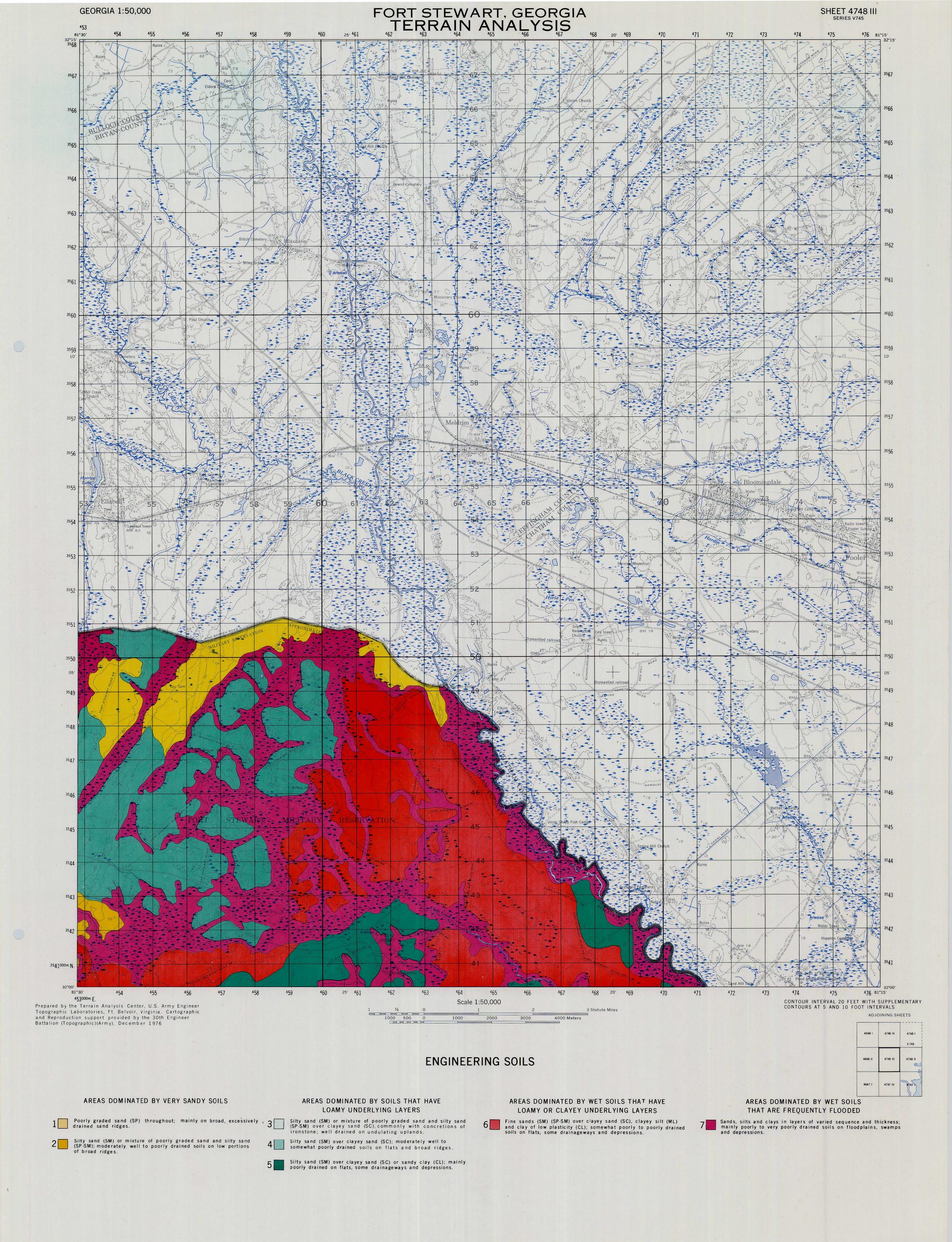
#### SOIL RELATED PROPERTIES AFFECTING LIMITATIONS

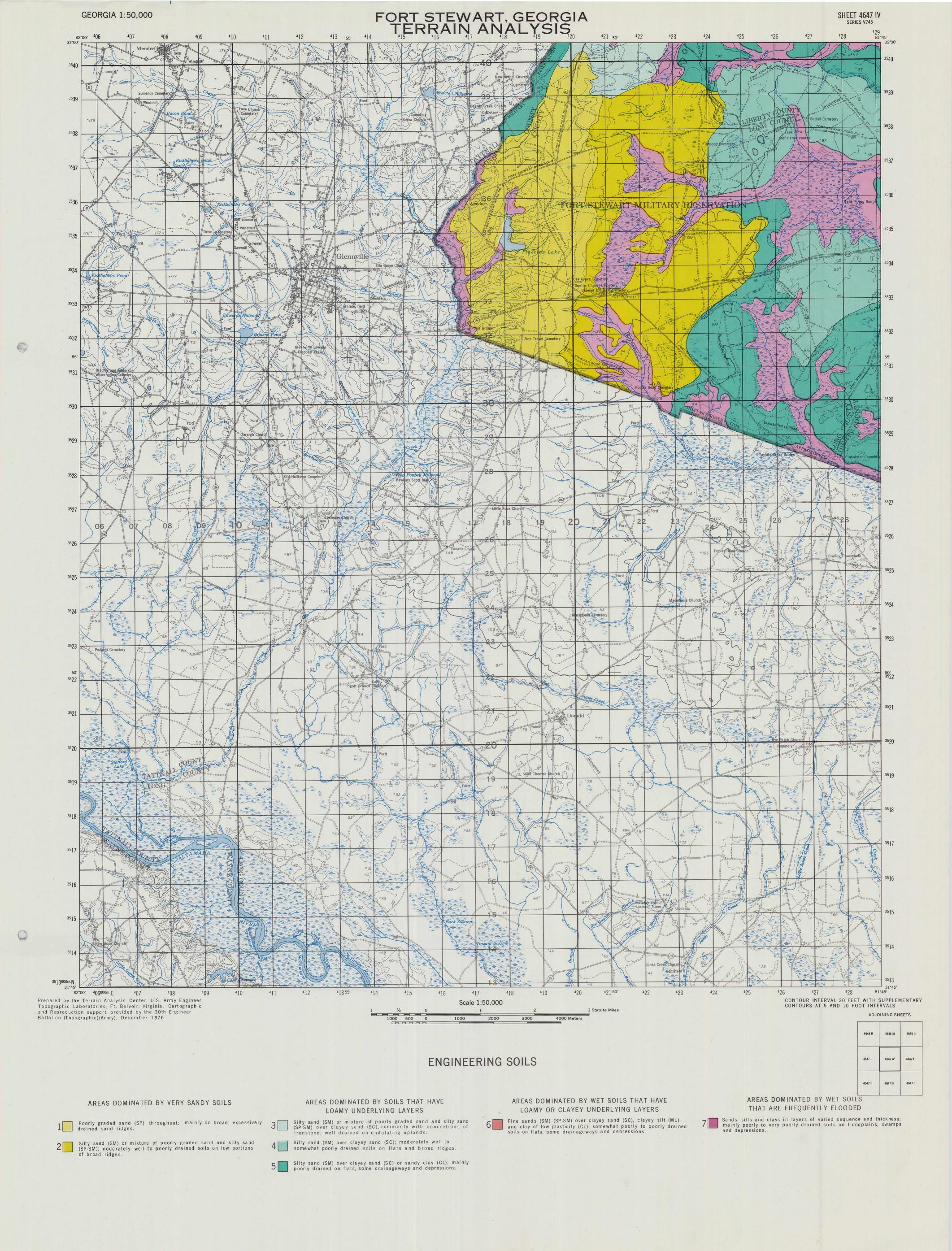
- b soil strength
- f flood hazard
- p high permeability (porous)
  s poor stability
- t surface texture
- w high water table or wetness

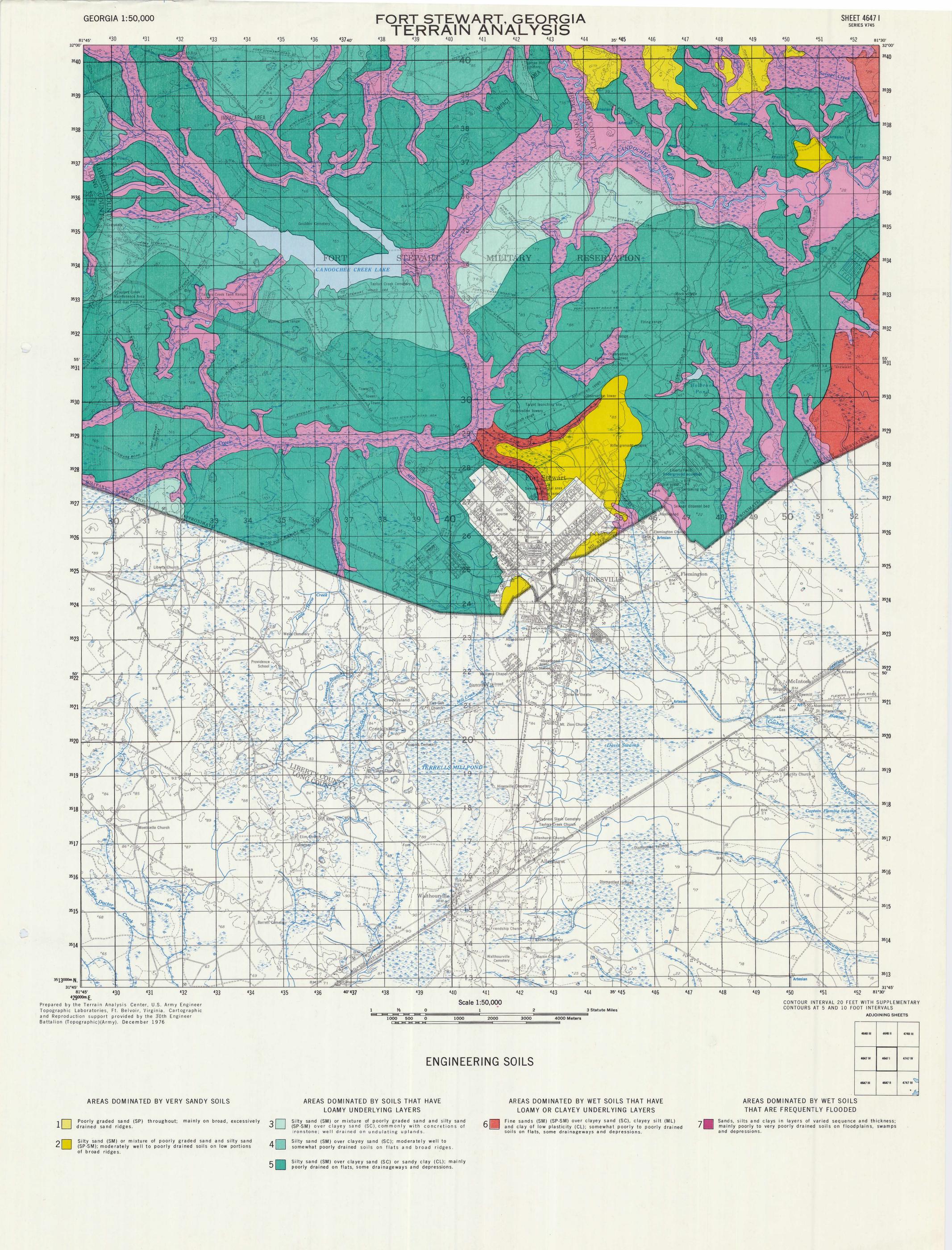
<sup>2/</sup>The Unified Soil Classification System, Technical memorandum No. 3-357, US Army Corps of Engineers, March 1953.

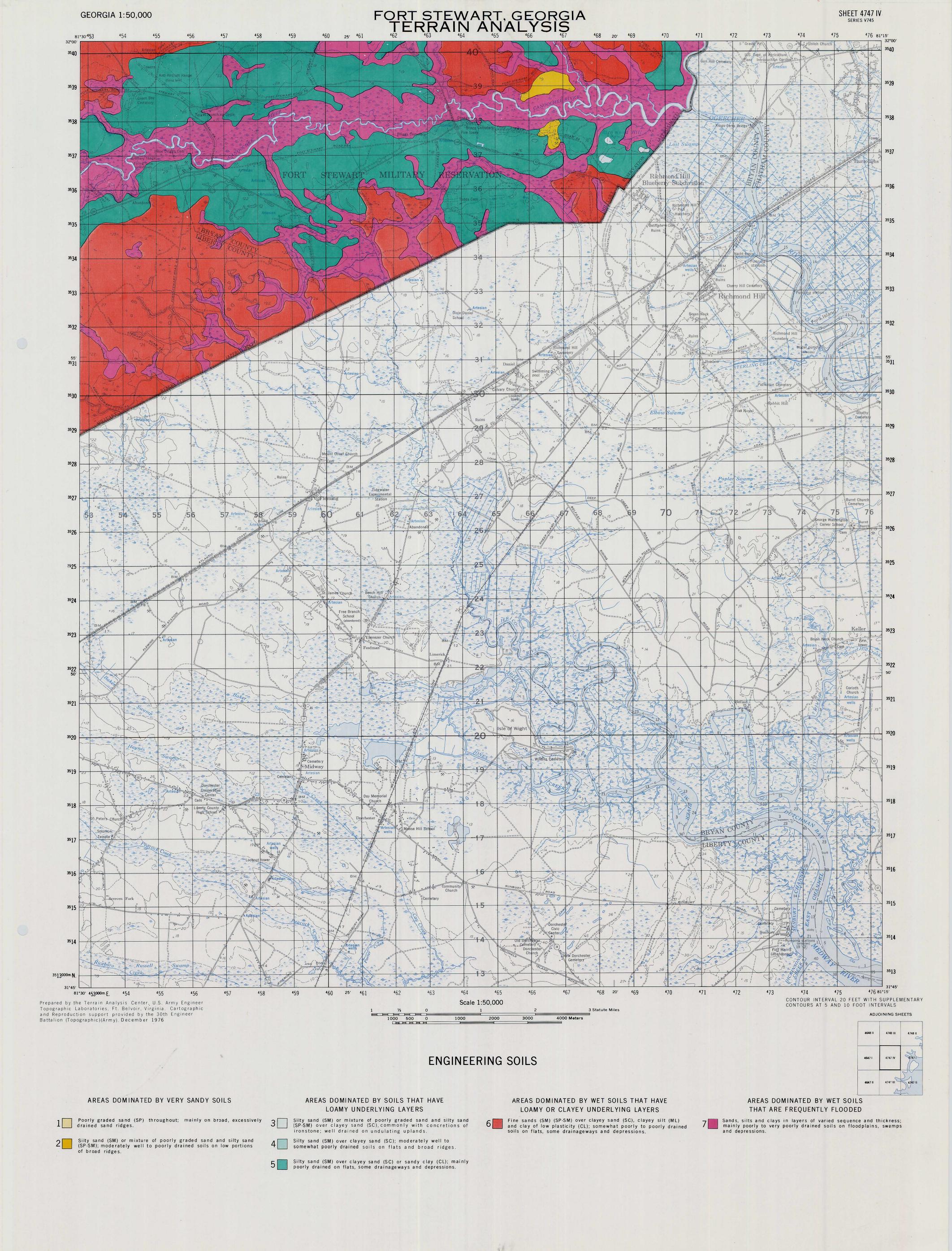












### E. Engineering Geology

The entire area of Fort Stewart, lying well within the Atlantic Coastal Plain physiographic province, has mainly clayey to sandy soils that have been derived mainly as outwash material from upland areas to the west and northwest. Underlying materials are largely unconsolidated, marine near shore sandy outwash deposits to considerable depths. They are not only similar to the surface materials, but are difficult to differentiate from them, especially where they occur in close proximity to one another, particularly in the eastern parts of the reservation. No consolidated rock occurs anywhere at the surface within Fort Stewart.

Clayey, silty, and nearly pure sand have been produced for many years and in very large tonnages for road surfacing from numerous borrow pits distributed throughout the reservation, clay for binding sand in road surfacing -- especially on tank trails -- occurs locally at several borrow sites on the Okefenokee Terrace, in the far west, and at a single large deposit in the north-central perimeter area at UTM Grid Reference 476512. Nearly all of the borrow sites are readily identifiable on the panchromatic (Apr 1968), color (Dec 1975), and color infra-red (Apr 1974) aerial photography. Some of the pits are partly to completely flooded and would obviously require pumping to remain in production on a year-round basis, or as needed, some pits also appear to have been unused for a substantial period of time -- on the basis of vegetation regrowth that has taken place. There does not appear to be any problem in location of sand deposits for road surfacing, but supplies of clay are much less voluminous. It is reported that there are, at present, approximately 2,900 acres of borrow pits within the boundaries of Fort Stewart

Small amounts of hard gravelly marble- to fist-sized limonitic claystone concretions are found in the uppermost layers of the Okefenokee Terrace soils along Fort Stewart Road to the west of St. Lo Range, in the vicinity of UTM Grid Reference 208472. Similar but somewhat softer limonitic claystone concretions also occur in the Wicomico Terrace surface soils adjacent to Fort Stewart Road 37 in the general vicinity of UTM Grid Reference 320300. Quantities are believed too small to be worth washing and concentrating for possible use as construction aggregate.

Point bar sand deposits and very extensive sand terraces exist upstream along the Canoochee River between UTM Grid References 490360 and 410430, where this stream cuts through a broad, former marine barrier bar in the central part of the reservation These deposits would provide immense tonnages of clean fine sand for concrete and cement construction work. These formations are readily recognizable on recent (Dec 1975) color aerial photography at a scale of 1 20,000. Direct access to the river sides and margins of the terraces would, however, be difficult at most places during late autumn through spring except where roads lead to river landings Other Fort Stewart areas having sizable streams could be expected to provide additional point bar sands, but such areas are less convenient to the entire reservation. It would be expected that small combined self-contained dredges and washers would be used in working the point bar deposits. A map is not included for this topic because no consolidated rock occurs at the surface on the reservation See Non-Urban Culture Features map and text for location of borrow pits.

## F. Special Physical Phenomena

No militarily significant special physical phenomena occur at Fort Stewart. There is no modern history of damage from earthquakes in the area. In addition, there are no volcanic features, no dunes, no tidal bores, and no reports of tsunamis affecting the area. However, flood tides along major streams and flooding of extensive lowland areas due to hurricanes are known but infrequent.

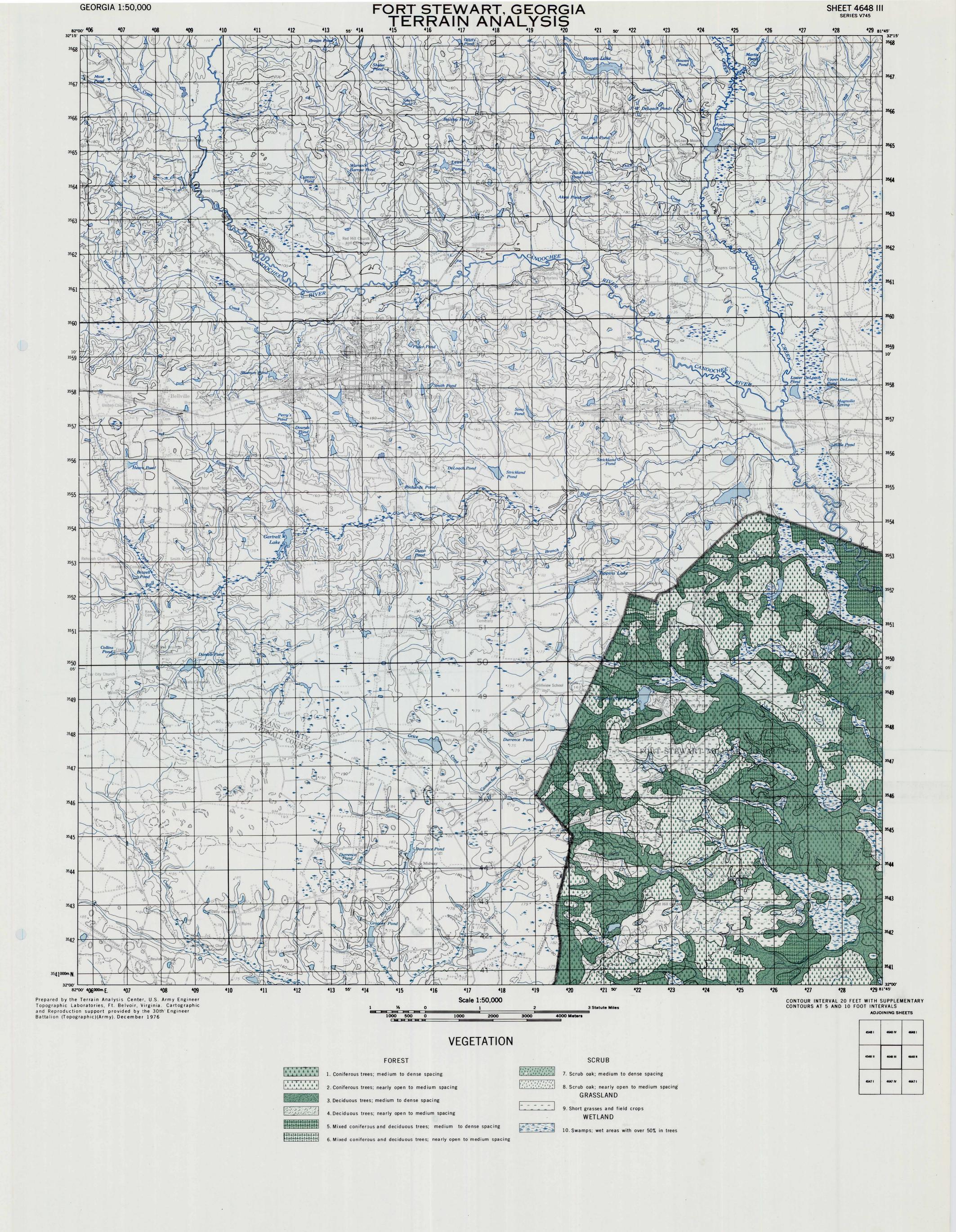
NOTE: No map included for this topic.

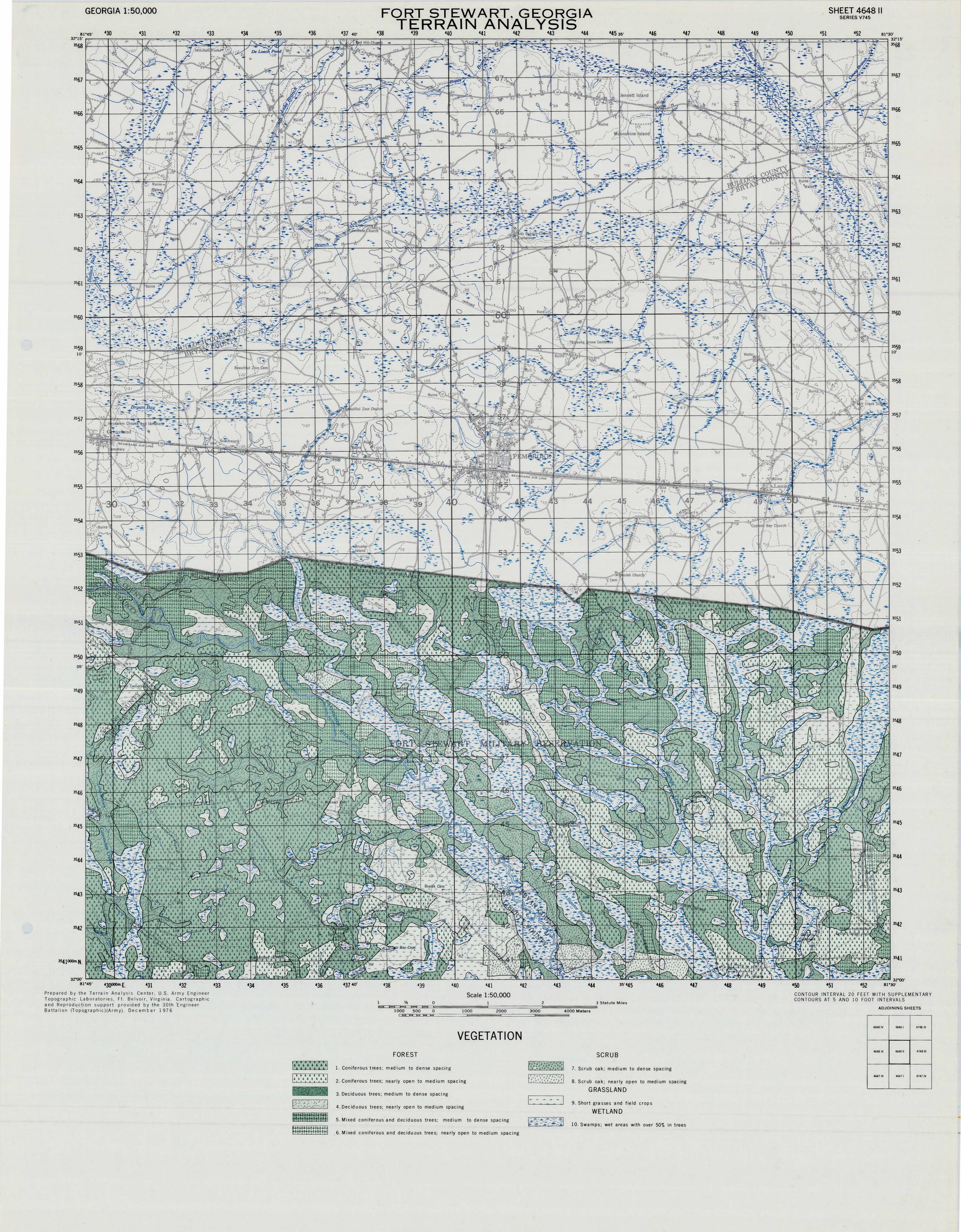
## G. Vegetation

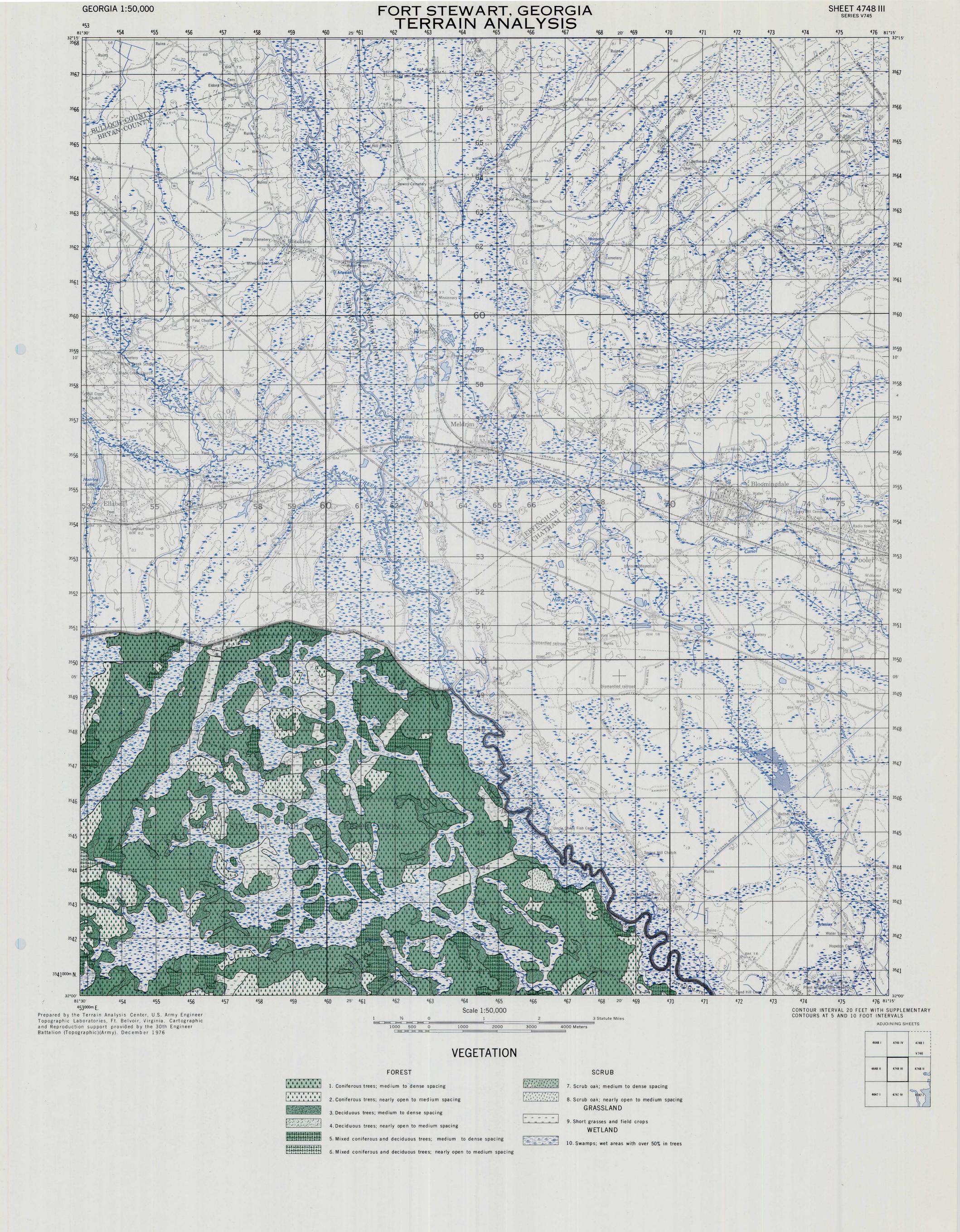
MAP	DESCRIPTION	DISTRIBUTION	REMARKS	CONCEALMENT	COVER
1	Coniferous trees, largely slash pine and longleaf pine with some loblolly pine and cypress; about 18 m average height, trunks usually 10-20 cm in diameter; 50-100% crown cover density; trunks generally spaced 2-5 m apart, branches to ground level on younger, less closely spaced trees, branches to within 10 m from ground level in mature, dense stands; includes scattered, shallow depressions, some small open areas, and many older reforested plantation areas, thick understory usually includes wiregrass, palmetto, gallberry bushes, or scrub oak, 75% or more of each stand composed of some coniferous species.	Stands throughout the base, usually on higher, broad, well-drained interfluves; cover approximately 25-30% of reservation.	Trees harvested throughout the year for pulpwood, poles and saw timber. Some controlled burning undertaken to eliminate fire hazard conditions.	Concealment from aerial and ground observation largely fair to good year round for foot troops and vehicles.	Cover from flat-trajectory fire of small arms for foot troops good in dense stands and fair in more widely spaced stands.
2	Coniferous trees, largely slash pine and longleaf pine, trunks generally less than 15 cm in diameter, 10-50% crown cover density, trees widely to moderately spaced, branches on young trees to ground level and on scattered mature trees to within 10 m from ground level, sparse undergrowth of wiregrass, gallberry bushes, palmetto, or scrub oak; numerous new plantation-type plantings in rows or along contours, 75% or more of each stand composed of coniferous species.	Stands widely scattered over reservation on higher interfluves.	Most stands cover formerly open fields or clear-cut areas. Some periodic, controlled burning as required to eliminate fire hazard conditions.	Concealment from aerial observation largely poor to fair year round for foot troops and vehicles; concealment from ground observation generally fair year round for foot troops and poor for vehicles.	Cover from flat-trajectory fire of small arms generally poor for foot troops.
3	Deciduous trees, principally bottomland species such as blackgum, sweetgum, sweetbay, tupelo, swamp oak, and water oak; about 18 m average height, trunks average 10-20 cm in diameter, 50-100% crown cover density, trunks generally spaced 2-5 m apart; branches to within 3 m from ground level; moderate to dense undergrowth of grass and brush usually less than 1 m high; leafless period generally November through March, 75% or more of each stand composed of one or more deciduous species.	Stands throughout reservation on lower slopes of interfluves along drainageways, most stands parallel swampy floodplains along the Canoochee River and its major tributories, stands elsewhere line narrower stream valleys.	Some selective cutting of mature trees.	Concealment from aerial and ground observation largely good from April through October for foot troops and vehicles when trees in leaf, and largely poor the rest of the year.	Cover from flat-trajectory fire of small arms for foot troops fair to good in dense stands and poor to fair elsewhere.
4	Deciduous trees, principally bottomland species such as blackgum, sweetgum, sweetbay, tupelo, swamp oak, and water oak; trunks generally less than 15 cm in diameter; 10-50% crown cover density, trees widely to moderately spaced; branches on younger trees to within 1 m from ground level and on older trees to within 3 m from ground level, sparse undergrowth of grass and brush less than 1 m high, some small openings, shallow depressions, and scrub oak areas; leafless period generally November through March; 75% or more of each stand composed of one or more deciduous species.	A few stands widely scattered, mainly border- ing drainageways along lower slopes of inter- fluves.		Concealment from aerial and ground observation largely poor for foot troops and vehicles; some concealment available when in leaf April through October.	Cover from flat-trajectory fire of small arms largely poor for foot troops.
5	Mixture of coniferous and deciduous trees, mainly slash pine, longleaf pine, blackgum, sweetgum, sweetbay, tupelo, swamp oak, and water oak, about 15-20 m average height, trunks 5-30 cm in diameter; 50-100% crown cover density, trunks spaced 2-5 m apart, branches generally to ground level on younger, less closely spaced trees, branches to within 10 m from ground level on mature dense stands; moderate to dense understory and undergrowth including wiregrass, bushes, or scrub oak, each stand contains roughly equal distributions of coniferous and deciduous species.	Stands largely in central and north-central sections of reservation on level to gently rolling surfaces near stream courses.	Mature trees harvested on a regular basis throughout the year.	Concealment from aerial and ground observation fair to good from April through October for foot troops and vehicles, poor to fair the rest of the year.	Cover from flat-trajectory fire of small arms for foot troops good in dense stands and fair in more widely spaced stands.
6	Mixture of coniferous and deciduous trees, mainly slash pine, longleaf pine, blackgum, sweetgum, sweetbay, tupelo, swamp oak, and water oak; trunks generally less than 15 cm in diameter, 10-50% crown cover density; trees widely to moderately spaced, branches on younger trees to ground level and on older trees within 10 m from ground level, sparse undergrowth of grass and brush less than 1 m high, some patches of scrub oak less than 4.5 m high, each stand contains roughly equal distributions of coniferous and deciduous species.	Isolated stands, mainly in the north-central section of reservation on nearly level surfaces.		Concealment from aerial and ground observation poor to fair year round for foot troops and vehicles.	Cover from flat-trajectory fire of small arms largely poor for foot troops.
7	Scrub oak trees; generally less than 4.5 m high; trunks up to 13 cm in diameter, 50-100% crown cover density; trunks spaced 2-4 m apart; branches to ground level; generally sparse undergrowth of grass less than 1 m high, leafless period generally November through March, 75% or more of each stand composed of scrub oak trees.	Stands on sandy ridges north of Canoochee River.	Little or no commercial value.	Concealment from aerial and ground observation for foot troops fair from April through October and poor rest of year, poor year round for vehicles.	Cover from flat-trajectory fire of small arms largely poor for foot troops.
8	Scrub oak trees; generally less than 4.5 m high, trunks up to 13 m in diameter; 10-50% crown cover density; trees widely spaced; branches to ground level; generally sparse undergrowth of grass less than 1 m high, leafless period generally November through March, 75% or more of each stand composed of scrub oak trees.	Stands largely on the sandy ridges north of the Canoochee River with a few smaller stands in the extreme southwestern and eastern section of reservation.	Little or no commercial value.	Concealment from aerial and ground observation generally poor year round for foot troops and vehicles.	Cover from flat-trajectory fire of small arms largely poor for foot troops.

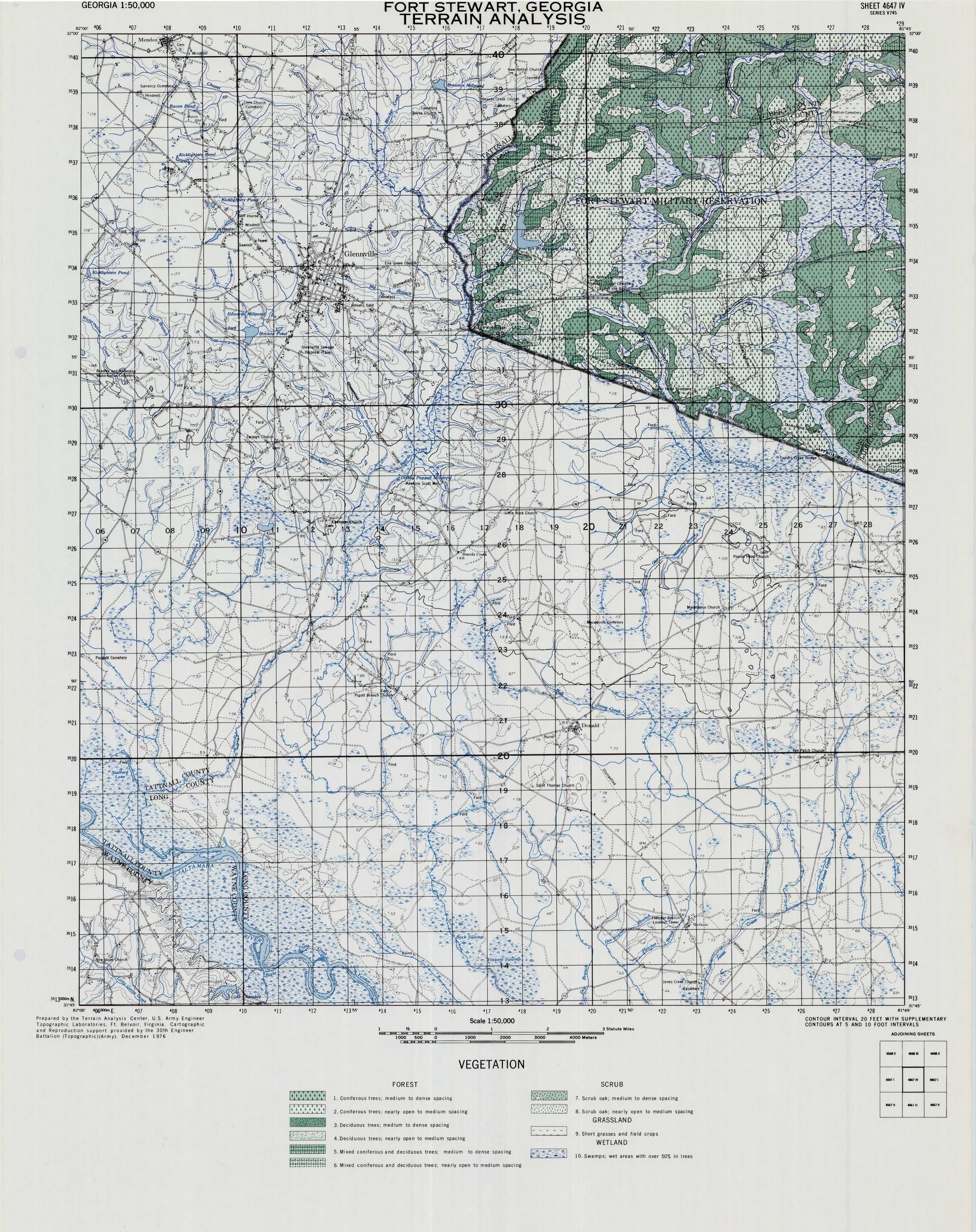
## G. Vegetation

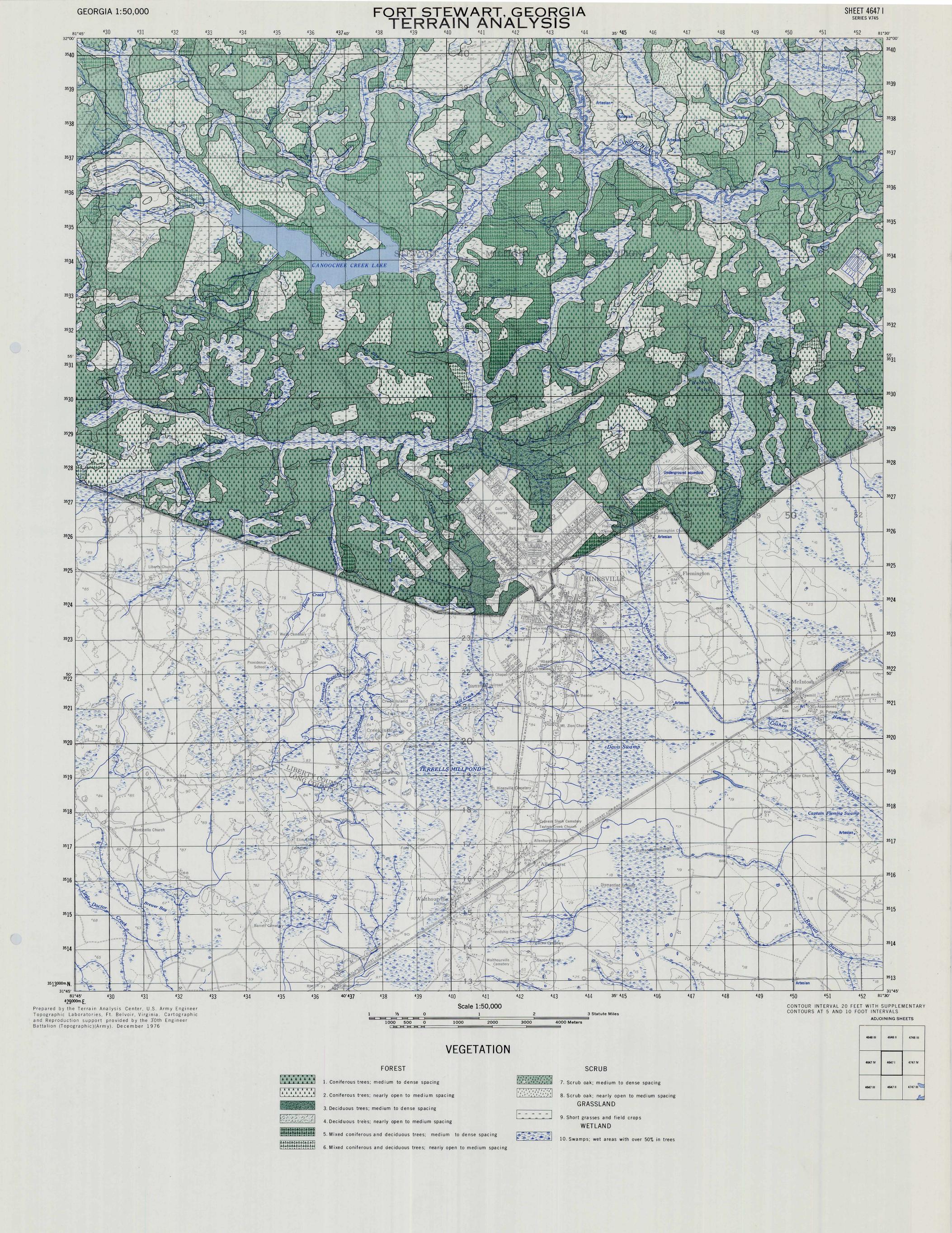
MAP UNIT	DESCRIPTION	DISTRIBUTION	REMARKS	CONCEALMENT	COVER		
9	Short grasses, less than 1 m high; wildlife clearings, many planted to winter rye, for conservation and wildlife cover and food; some grassland areas include small, poorly drained depressions with brush or marsh grasses; many intensively used military areas outside of the main cantonment area, such as ranges and airfields, in this map unit; widely scattered trees, not to exceed 10% of a particular area, in some grasslands.	Grasslands throughout the reservation usually on the better drained higher surfaces.	Some grasslands, used inten- sively for military purposes, mowed on a regular basis.	Concealment from aerial and ground observation poor year round for foot troops and vehicles.	No cover for foot troops.		
)	Swamps of closely spaced, predominantly deciduous brush, shrubs, and trees with open water areas along the larger streams; bottomland hardwoods mainly blackgum, sweetgum, sweetbay, tupelo, swamp oak, and water oak with some pond pine, cypress, palmetto, and titi; small, shallow depressions, found in pine forests, contain closely spaced cypress trees with grass and brush less than 1 m high; average height of swamp forests approximately 20 m; trunks closely spaced; dense understory frequently includes many stumps and fallen trees.	Swamps throughout the reservation; largest continuous areas along the Canoochee River, Canoochee Creek and in eastern half of reservation; small, shallow depressions scattered throughout; approximately 30% of the reservation covered by swamp vegetation.	Most mature cypress trees harvested prior to land acquisition for military purposes.	Concealment from aerial and ground observation for foot troops and vehicles fair from April through October and poor rest of year; only swimming vehicles could utilize these areas for concealment.	Cover from flat-trajectory fire of small arms largely fair to good for foot troops. Extremely wet soils may preclude use of these areas by foot troops.		

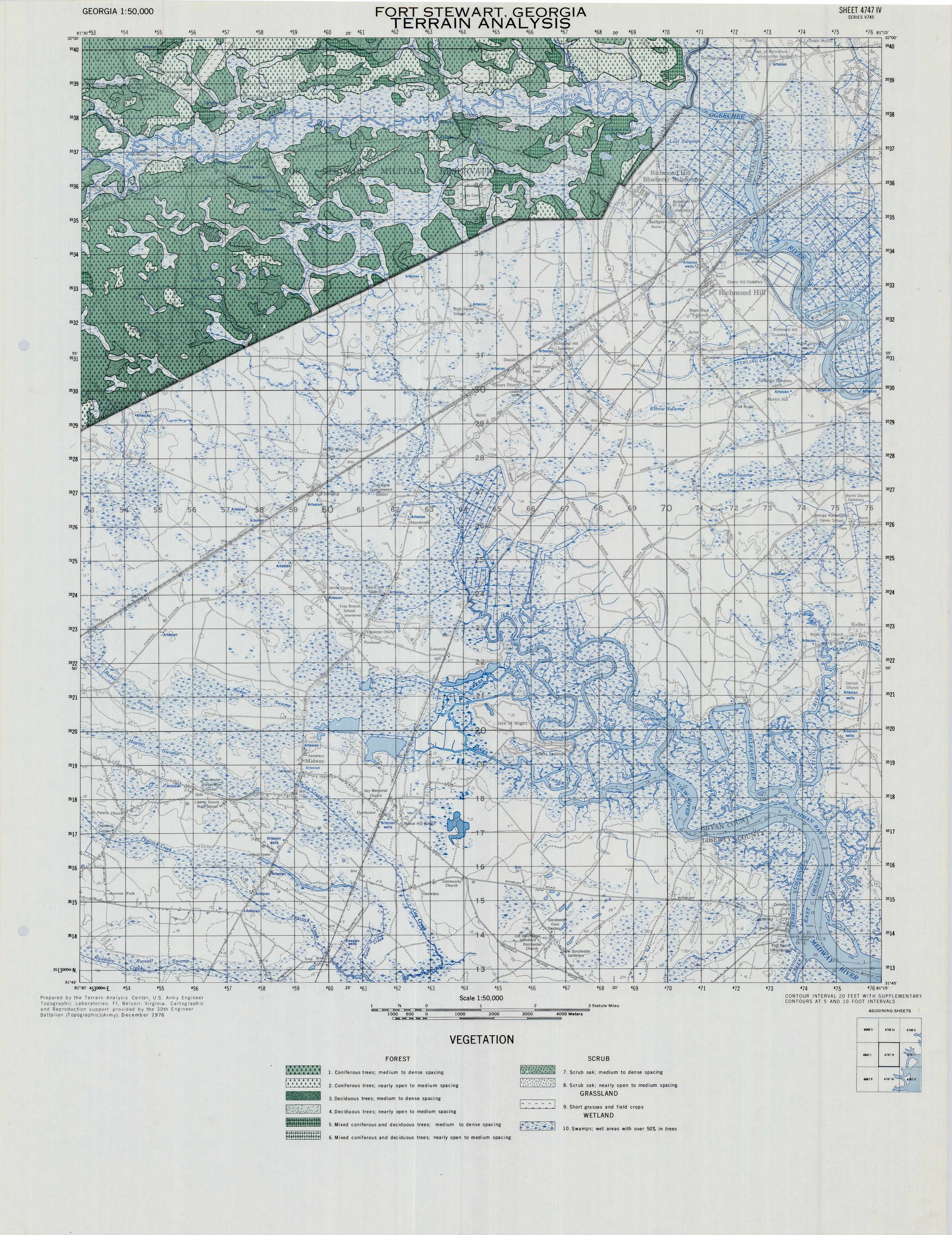












#### H. Climate

Fort Stewart, characterized by mild winters and long, hot summers, lies within the humid subtropics. The mean daily minimum temperature in the coldest months, December and January, is 4.4° C (40° F) and the mean daily maximum in the hottest month, July, is 33.9° C (93° F). Over a 21-year period of record, the highest temperature recorded at Fort Stewart has been 41.1° C (106° F) and the lowest has been -11.1° C (12° F).

Although, on an average, nearly 3 out of 10 nights during December and January have below-freezing temperatures, the temperatures almost always climb above freezing during the afternoon. The wind chill temperature (a combined effect of cold and wind) may occasionally drop to levels of from -20° C to -25° C (-4° F to -13° F), but while this may be a hazard to unprotected personnel in the open, it is not a critical factor at Fort Stewart. The first and last killing frosts usually occur about December 1 and March 1, with all-time record early and late dates of October 25 and April 16, respectively.

Mostly, summer heat is a greater threat than winter cold to both materiel and personnel at Fort Stewart. Physiological heat stress is a product not merely of air temperature, but also of environmental factors of humidity, solar radiation and the presence or absence of air movement, to which must be added the physical or metabolic work load of the man. Following Army-wide directives (TB Med 175), the Wet Bulb Globe Temperature (WBGT) is utilized to determine critical points at which commanders are advised to halt or curtail training activities. For this purpose, 4 categories of combined environmental heat stress are recognized, beginning with a WBGT figure of 82 at which strenuous activity by unacclimatized men should be halted. The highest category includes conditions of a WBGT of 90 and over, at which even light activity by acclimatized men may be suspended. At Fort Stewart, in the single year of available records (1975), the highest WBGT value was 96, and there were 34 days with WBGT readings over 90. The earliest was May 23, the latest September 12.

The average annual precipitation at Fort Stewart is about 1,270 mm (50 in), half of this falling during the thunderstorm season of June through September. The driest month is November, receiving an average of 43.2 mm (1.7 in). While the wettest month on average is July, with a normal rainfall of 193.0 mm (7.6 in), the heaviest single continuous outpourings of rain generally occur in August and September, in connection with severe tropical storms. A maximum 24-hour rainfall record of 406.4 mm (16 in) was recorded at Fort Stewart in September 1940, but on two occasions, 24-hour totals of more than 558.8 mm (22 in) occurred at the nearby Savannah stations, whose meteorological records extend more than 80 years longer than those of Fort Stewart. Outside of the thunderstorm season, rainfall is produced mainly by squall-line and frontal showers.

Snowfall is not common during winter, and when it does occur, most often in February, it is neither deep nor persistent. Snowfalls of 91.4 mm (3.6 in) and 81.3 mm (3.2 in) were measured in February 1968 and February 1973 respectively, and these appear to be the only instances of snow, other than traces, over a 24-year meteorological record.

Under normal conditions wind speeds rarely exceed 5 knots. However, at least once a year Fort Stewart can expect high winds as a result of a hurricane or tropical storm, usually in August and September. About once in 10 years such a storm is very severe, and a maximum wind velocity of 78 knots was recorded during a hurricane in 1940. Surface winds, generally under 25 knots, accompany the usual summer thunderstorms, and during winter and spring there tend to be prevailing westerly winds of 25 to 40 knots following the passage of any frontal system.

See the table on following page for summary of climatic data.

PARAMETER DESCRIPTION		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	ост	NOV	DEC	ANNUAL	YEARS OF RECORD
Absolute Maximum Temperature Absolute Maximum Temperature	(°C) (°F)	28.9 84.0	29.4 85.0	33.9 93.0	35.0 95.0	39.4 103.0	40.6 105.0	41.1	40.6 105.0	38.9 102.0	35.0 95.0	31.1 88.0	30.0 86.0	41.1 106.0	22 22
·							33.3	33.9	33.3	30.6	26.7	21.7	17.8	26.1	19
Mean Daily Maximum Temperature Mean Daily Maximum Temperature	(°C) (°F)	18.3 65.0	19.4 67.0	22.2 72.0	26.1 79.0	30.6 87.0	92.0	93.0	92.0	87.0	80.0	71.0	64.0	79.0	19
Mean Daily Minimum Temperature	(°C)	4.4 40.0	5.6 42.0	8.3 47.0	12.2 54.0	16.7 62.0	20.0 68.0	21.7 71.0	21.1 70.0	19.4 67.0	13.3 56.0	7.8 46.0	4.4 40.0	12.8 55.0	18 18
Mean Daily Minimum Temperature	(°F)											-7.8	-8.3	-11.1	21
Absolute Minimum Temperature Absolute Minimum Temperature	(°C) (°F)	-11.1 12.0	-9.4 15.0	-7.2 19.0	-1.1 30.0	4.4 40.0	10.0 50.0	15.0 59.0	14.4 58.0	5.0 41.0	-2.8 27.0	18.0	17.0	12.0	21
Mean Number Days with Maximum Temperature  > 90°F (32.2°C)		0.0	0.0	0.2	0.6	7.3	14.5	20.6	19.4	6.0	0.8	0.0	0.0	69.4	12
Mean Number Days with Minimum Temperature < 32°F (0.0°C)		9.3	4.6	2.8	0.0	0.0	0.0	0.0	0.0	0.0	0.2	2.6	9.2	28.7	12
*Normal Heating Degree Days (Base 65°F/18.3°C)		483.0	379.0	256.0	63.0	7.0	0.0	0.0	0.0	1.0	60.0	253.0	458.0	1952.0	30
*Normal Cooling Degree Days (Base 65°F/18.3°C)		15.0	18.0	39.0	96.0	260.0	423.0	499.0	484.0	336.0	125.0	16.0	6.0	2317.0	30
Mean Dew Point Temperature Mean Dew Point Temperature	(°C) (°F)	4.4 40.0	6.7 44.0	7.8 46.0	12.2 54.0	16.7 62.0	20.6 69.0	22.2 72.0	21.7 71.0	20.0 68.0	13.9 57.0	8.3 47.0	4.4 40.0	13.3 56.0	12 12
Mean Percent Relative Humidity		73.0	73.0	70.0	70.0	72.0	75.0	77.0	78.0	80.0	76.0	74.0	73.0	74.0	12
Mean Monthly Precipitation Mean Monthly Precipitation	(mm) (in)	61.0 2.4	73.7 2.9	116.8 4.6	96.5 3.8	101.6 4.0	132.1 5.2	193.0 7.6	154.9 6.1	144.8 5.7	78.7 3.1	43.2 1.7	73.7 2.9	1270.0 50.0	20 20
Mean Number Days with Precipitation > 0.1 in (2.54 mm)		5.3	5.7	6.8	5.2	5.9	7.2	9.9	7.0	8.1	3.8	3.2	4.8	72.9	10
*Absolute Maximum Monthly Precipitation *Absolute Maximum Monthly Precipitation	(mm) (in)	182. <b>4</b> 7.18	201.2 7.92	253.0 9.96	196.6 7.74	256.0 10.08	365.5 14.39	510.5 20.10	379.5 14.94	439.4 17.30	216.9 8.54	124.7 4.91	191.0 7.52	1858.5 73.17	40 40
*Absolute Minimum Monthly Precipitation *Absolute Minimum Monthly Precipitation	(mm) (in)	12.2 0.48	13.2 0.52	4.6 0.18	7.1 0.28	13.0 0.51	21.3 0.84	33.8 1.33	33.8 1.33	9.1 0.36	1.5 0.06	3.8 0.15	10.2 0.4	757.2 29.81	40 40
Mean Number Days with Thunderstorms		0.6	1.0	2.9	4.8	7.8	11.3	15.6	12.5	7.1	1.1	0.4	0.3	65.4	12
Mean Monthly Snowfall Mean Monthly Snowfall	(mm) (in)	0.0	2.5 0.1	0.0 0.0	0.0 0.0	0.0 0.0	0.0 0.0	0.0 0.0	0.0	0.0	0.0	0.0 0.0	0.0 0.0	2.5 0.1	10 10
Mean Number Days with Snowfall  > 1.5 in (38.1 mm)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10
Mean Pressure Altitude Mean Pressure Altitude	(m) (ft)	-49.07 -161.0	-39.32 -129.0	-28.96 -95.0	-21.03 -69.0	-14.02 -46.0	-10.67 -35.0	-21.34 -70.0	-14.02 -46.0	-10.97 -36.0	-21.95 -72.0	-40.84 -134.0	-48.77 -160.0	-26.52 -87.0	
Percent Frequency of Surface Wind Speed  > 28 knots (32.24 mph or 51.9 kmph)		0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	12
Percent Frequency of Surface Wind Speed  > 17 knots (19.58 mph or 31.5 kmph)		4.1	5.5	5.6	4.3	1.2	0.8	0.7	1.1	1.7	1.8	3.0	3.5	2.8	12
Mean Number Days with Surface Wind	(at 1900 LST)	0.6	0.9	0.5	0.6	0.2	0.0	0.3	0.2	0.1	0.0	0.3 0.6	0.3 0.6	4.0 4.4	12 12
> 17 knots (19.58 mph or 31.5 kmph)	(at 0100 LST)	0.7 0.3	0.8 0.4	0.6 0.5	0.6 0.3	0.1 0.2	0.0 0.0	0.0 0.0	0.1 0.1	0.3 0.1	0.0 0.2	0.0	0.6	2.9	12
and no Precipitation	(at 0700 LST) (at 1300 LST)	4.5	4.2	4.5	3.4	0.9	0.7	0.3	0.8	1.2	2.0	2.5	3.2	28.2	12
Mean Number Days with Surface Wind 4-10	(at 1900 LST)	23.4	20.6	23.2	24.5	26.7	25.3	25.4	25.7	25.4	24.3	23.2	22.8	290.5	12
knots (4.61-11.5 <sup>2</sup> mph or 7.4-18.5	(at 0100 LST)	20.1	17.5	21.5	20.2	20.9	18.9	21.1	19.6	20.0	21.9	20.6	18.8	241.1	12
kmph) and Temperature 33-89°F (0.6-31.7°C) and no Precipitation	(at 0700 LST) (at 1300 LST)	17.2 14.0	18.4 13.8	20.7 14.8	20.2 14.1	23.4 17.0	23.5 14.3	23.9 12.1	21.6 11.1	19.5 16.5	20.8 17.9	20.2 18.5	17.0 16.6	246.4 180.7	12 12
*Fastest One-Minute Wind Speed	(mph)	46.0	44.0	40.0	40.0	42.0	66.0	51.0	58.0	56.0	37.0	34.0	37.0	66.0	30
*Fastest One-Minute Wind Speed	(kmph)	74.0	70.8	64.4	64.4	67.6	106.2	82.1	93.3	90.1	59.6	54.7	59.6	106.2	30
Mean Number Days with an Occurrence of		4.3	3.4	2.3	2.9	2.4	1.4	1.1	1.4	3.8	3.7	4.7	4.3	35.7	12
Visibility $\leq 0.5$ mi (0.8 km)						65					•				

PARAMETER DESCRIPTION	·	JAN	FEB	MAR	APR	MAY	JUN	JUL.	AUG	SEP	ОСТ	NOV	DEC	ANNUAL	YEARS OF RECORD
Percent Frequency Ceiling $\leq$ 5,000 ft (1,524 m) or Visibility $\leq$ 5 mi		28.9	29.6	28.1	23.4	21.2	20.7	17.5	19.9	29.8	27.1	26.6	27.3	25.0	12
(8.047 km)										,	· .				
Percent Frequency Ceiling < 1,500 ft (457.2 m) or Visibility < 3 mi	(for 0000 - 0200 LST)	16.8	16.8	14.0	11.7	7.2	5.2	3.3	5.8	12.3	14.5	19.2	15.8	11.9	12
(4.828 km)	(for 0300 - 0500 LST)	19.5	21.9	19.5	20.1	15.9	11.6	8.9	12.0	23.7	22.0	21.4	18.3	17.9	12
	(for 0600 -	22.4	26.0	22.8	19.9	17.9	13.8	9.6	15.3	31.2	24.4	25.6	21.7	20.9	12
	0800 LST) (for 0900 - 1100 LST)	17.1	18.9	16.9	7.3	5.9	5.3	5.0	6.8	16.0	15.9	14.4	17.5	12.3	12
	(for 1200 - 1400 LST)	10.3	11.9	10.8	3.5	2.6	2.2	2.3	3.6	6.9	8.4	7.7	12.6	6.9	12
	(for 1500 -	8.5	9.3	9.9	3.0	2.2	1.5	2.3	3.7	6.0	7.0	5.0	7.5	5.5	12
	1700 LST)	10.0	11.0												
	(for 1800 - 2000 LST)	10.9	11.0	10.3	4.9	3.9	2.6	2.2	2.9	4.2	6.8	6.3	9.1	6.3	12
	(for 2100 - 2300 LST)	12.8	15.1	10.9	6.0	4.3	2.2	1.3	3.5	6.7	7.9	9.5	13.0	7.8	12
Percent Frequency Ceiling $\leq$ 300 ft (91.4 m) or Visibility $\leq$ 1 mi (1.609 km)	(for 0000 - 0200 LST)	7.2	5.7	3.0	2.9	1.5	0.7	0.7	1.3	3.9	4.7	8.6	6.2	3.9	12
, or thousands <u>a</u> 1 mm (1.003 km)	(for 0300 - 0500 LST)	7.9	8.1	4.3	8.0	6.7	4.0	3.3	3.7	9.8	9.7	10.8	8.5	7.1	12
	(for 0600 -	9.0	8.9	5.3	5.8	4.2	3.4	1.6	4.8	10.0	7.6	13.1	9.3	6.9	12
	0800 LST) (for 0900 -	2.8	2.7	1.8	0.2	0.2	0.1	0.0	0.3	0.6	1.1	2.9	2.9	1.3	12
	1100 LST) (for 1200 -	1.5	0.8	0.4	0.1	0.1	0.2	0.3	0.3	0.1	0.0	0.7	0.4	0.4	12
	1400 LST) (for 1500 -	1.5	1.0	0.5	0.0	0.0	0.1	0.3	0.2	0.1	0.1	0.4	0.4	0.4	12
	1700 LST) (for 1800 -	3.0	1.7	0.7	0.1	0.1	0.3	0.1	0.4	0.3	0.6	0.9	2.3	0.9	12
	2000 LST) (for 2100 -	4.7	4.3	1.8	0.4	0.2	0.0	0.0	0.2	0.8	1.6	2.8	5.0		
	2300 LST)			10.7	13.2	9.1	6.8	5.2	7.2	8.6	16.6	15.4	14.2	1.8	12 12
Mean Number Days with Sky Cover ≤ 30%	(at 1900 LST)	14.0	11.6	12.3	16.7	15.2	15.2	14.8	14.7	14.2	18.1	14.0	13.6	175.3	12
and Visibility <u>&gt;</u> 3 mi (4.828 km)	(at 0100 LST)	14.2	12.3	9.3	10.8	11.5	9.9	9.1	10.3	7.4	13.9	11.2	11.0	122.8	12
	(at 0700 LST)	10.0	8.4	8.7	9.4	6.4	3.2	1.7	2.3	3.2	9.6	11.6	10.3	84.5	12
	(at 1300 LST)	9.9	8.2	00.1											••
Mean Number Days with Ceiling > 1,000	(at 1000 LCT)	00.0	05.0	28.1	28.7	30.0	29.4	30.6	30.2	28.7	29.5	28.4	28.6	346.3	12
ft (304.8 m) and Visibility > 3 mi	(at 1900 LST) (at 0100 LST)	28.3 26.5	25.8 24.0	27.2 24.1	27.2	38.8	28.8	30.1	29.5	26.9	26.8	24.3	26.8	326.9	12
(4.828 km)	(at 0700 LST)	24.7	21.4	28.5	25.5 29.5	26.5 30.2	26.6 29.7	28.1	26.3	21.1	23.9	22.7	24.7	295.6	12
•	(at 1300 LST)	28.7	26.0	20.5	23.3	30.2	29.1	30.5	30.3	28.7	29.5	28.6	28.4	348.6	12
	(40 1000 4017	2011	20.0	21.0	21.4	26.2	24.7	26.2	27.1	24.9	26.1	24.5	23.3	386.6	12
Mean Number Days with Ceiling > 2,000	(at 1900 LST)	22.3	18.9	20.9	22.7	27.1	26.6	28.7	27.7	24.1	22.7	19.6	20.5	277.6	12
ft (609.6 m) and Visibility > 3 mi	(at 0100 LST)	19.5	17.5	18.2	19.4	22.7	23.2	25.4	24.0	16.7	19.0	17.5	19.0	239.4	12
(4.828 km) and Surface Wind $\leq$ 10	(at 0700 LST)	19.0	15.3	11.2	11.9	16.9	17.4	20.2	20.6	15.2	14.2	13.8	12.1	173.9	12
knots (11.5 mph)	(at 1300 LST)	10.7	9.7	27.0	27.8	29.1	28.6	29.9	20. 7	07 6	20. 1	07.6			
Mean Number Days with Ceiling > 2,500	(at 1900 LST)	26.8	24.5	25.6	26.3	28.3	27.9	29.6	29.7 28.8	27.5 25.7	28.1	27.6	26.6	333.2	12
ft (762.0 m) and Visibility > 3 mi	(at 0100 LST)	24.7	22.2	22.4	24.1	25.1	25.3	27.8	25.9	19.7	25.3 22.6	23.1	25.5	313.0	12
(4.828 km)	(at 0700 LST)	22.3	19.5	26.7	27.9	28.7	28.4	29.1	28.2	25.4	26.5	21.2	23.6	279.5	12
	(at 1300 LST)	25.7	22.7		2		2014	LJ. 1	20.2	23.4	20.5	26.1	25.3	320.7	12
M		· ·		24.5	26.0	27.3	26.9	27.6	28.5	24.3	25.4	25.6	23.6	306.1	12
Mean Number Days with Ceiling ≥ 6,000	(at 1900 LST)	24.1	22.3	23.7	25.1	27.2	27.5	29.0	28.3	24.3	24.0	20.3	23.0	294.2	12
ft (1,828.8 m) and Visibility $\geq$ 3 mi	(at 0100 LST)	22.1	19.7	19.3	22.2	23.1	24.8	27.3	24.9	18.4	21.7	19.6	20.9	258.3	12
(4.828 km)	(at 0700 LST)	19.4	16.7	21.2	20.3	21.1	17.9	17.2	18.7	16.4	21.0	21.4	21.7	236.5	12
	(at 1300 LST)	21.5	18.1	23.0	21 6	26 6	00.0	06.7	07.0	22 =	<b>A.</b>				
Mean Number Days with Ceiling > 10,000	(at 1900 LST)	22.4	20.2	23.0 21.7	24.6 24.0	26.6 25.8	26.3	26.7	27.0	22.7	24.4	24.1	22.2	290.2	12
ft (3,048.0 m) and Visibility $\geq$ 3 mi	(at 0100 LST)	20.7	18.6	18.4	24.0 20.8	25.8 21.7	26.6 24.1	28.4	27.2	22.8	23.4	19.0	20.8	279.0	12
(4.828 km)	(at 0700 LST)	18.2	15.1	20.1	19.5	20.7	24. I 17. 1	26.7 16.6	24.1	17.3	20.3	18.5	19.3	244.5	12
•	(at 1300 LST)	20.0	16.7	E-U - 1	19.0	20.7	17.1	16.6	18.6	15.8	20.2	20.6	20.8	226.7	12

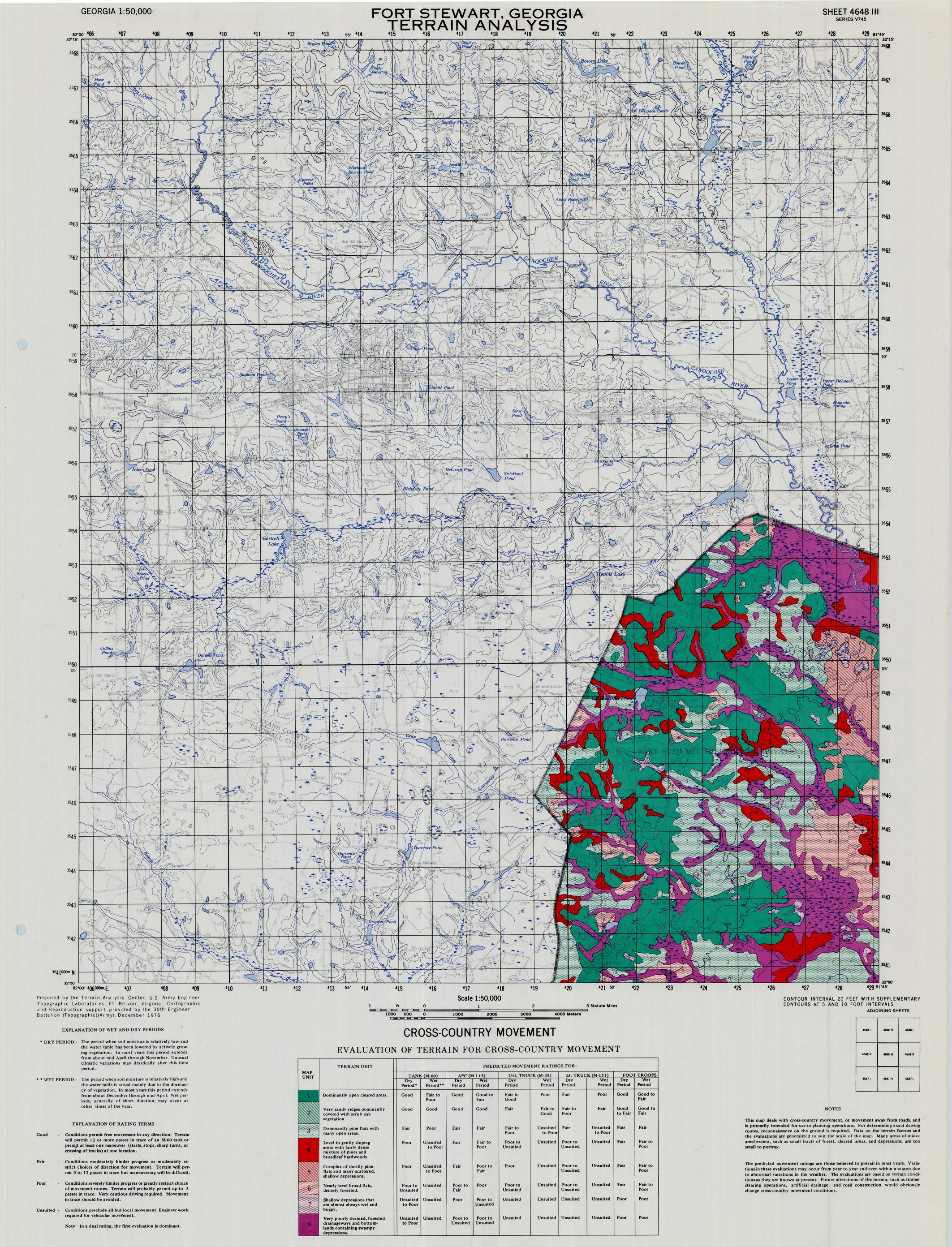
<sup>\*</sup>Data derived from Savannah, Georgia station records, not from Fort Stewart

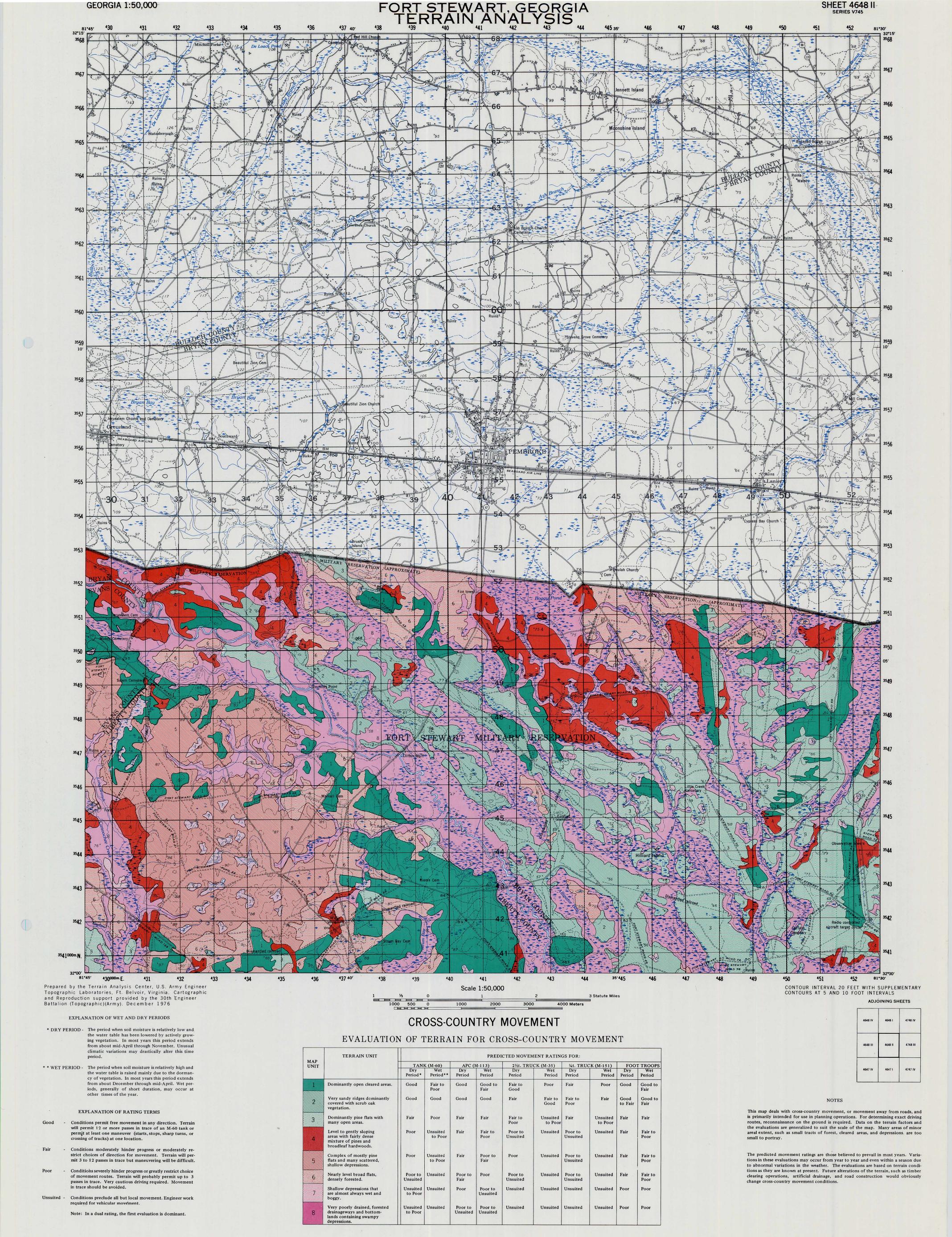
#### FORT STEWART, GEORGIA EPHEMERIS

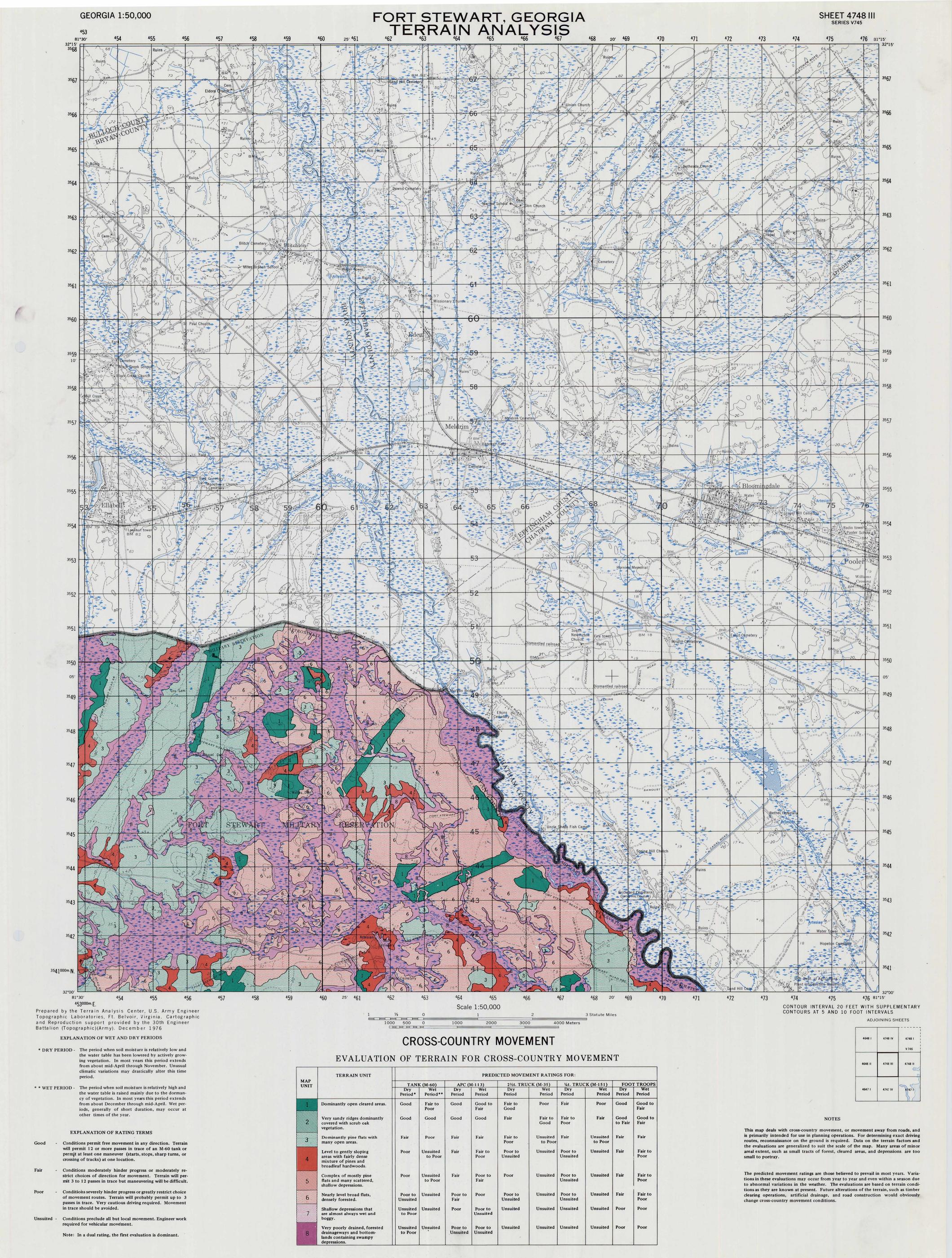
	Nautical Tw	rilight			(EASTERN STANDARD TIME)	Nautical Tw	vilight		
Date	Beginning	End	Sunrise	Sunset	Date	Beginning	End	Sunrise	Sunset
January 1	0629	1831	0727	1733	July 1	0421	2038	0524	1936
January 11	0631	1838	0728	1741	July 11	0427	2036	0529	1935
January 21	0630	1845	0726	1750	July 21	0434	2031	0534	1931
February 1	0625	1855	0720	1800	August 1	0443	2022	0542	1923
February 11	0619	1903	0712	1809	August 11	0451	2011	0555	1904
February 21	0610	1911	0703	1818	August 21	0459	1959	0555	1904
March 1	0601	1917	0654	1824	September 1	0507	1945	0601	1851
March 11	0549	1924	0642	1831	September 11	0514	1931	0608	1838
March 21	0537	1931	0629	1838	September 21	0521	1918	0614	1825
April	0522	1939	0615	1846	October 1	0527	1904	0620	1812
April 11	0509	1947	0603	1853	October 11	0534	1852	0627	1759
April 21	0456	1955	0551	1859	October 21	0541	1841	0634	1733
May 1	0444	2003	0541	1906	November 1	0549	1831	0643	1737
May 11	0434	2012	0532	1913	November 11	0556	1824	0651	1737
May 21	0426	2020	0526	1920	November 21	0604	1820	0700	1723
June 1	0420	2029	0521	1927	December 1	0612	1819	0708	1724
June 11	0417	2034	0520	1932	December 11	0619	1820	0716	1722
June 21	0418	2038	0521	1935	December 21	0625	1824	0722	1725
						-020	I OG T	0/22	1720

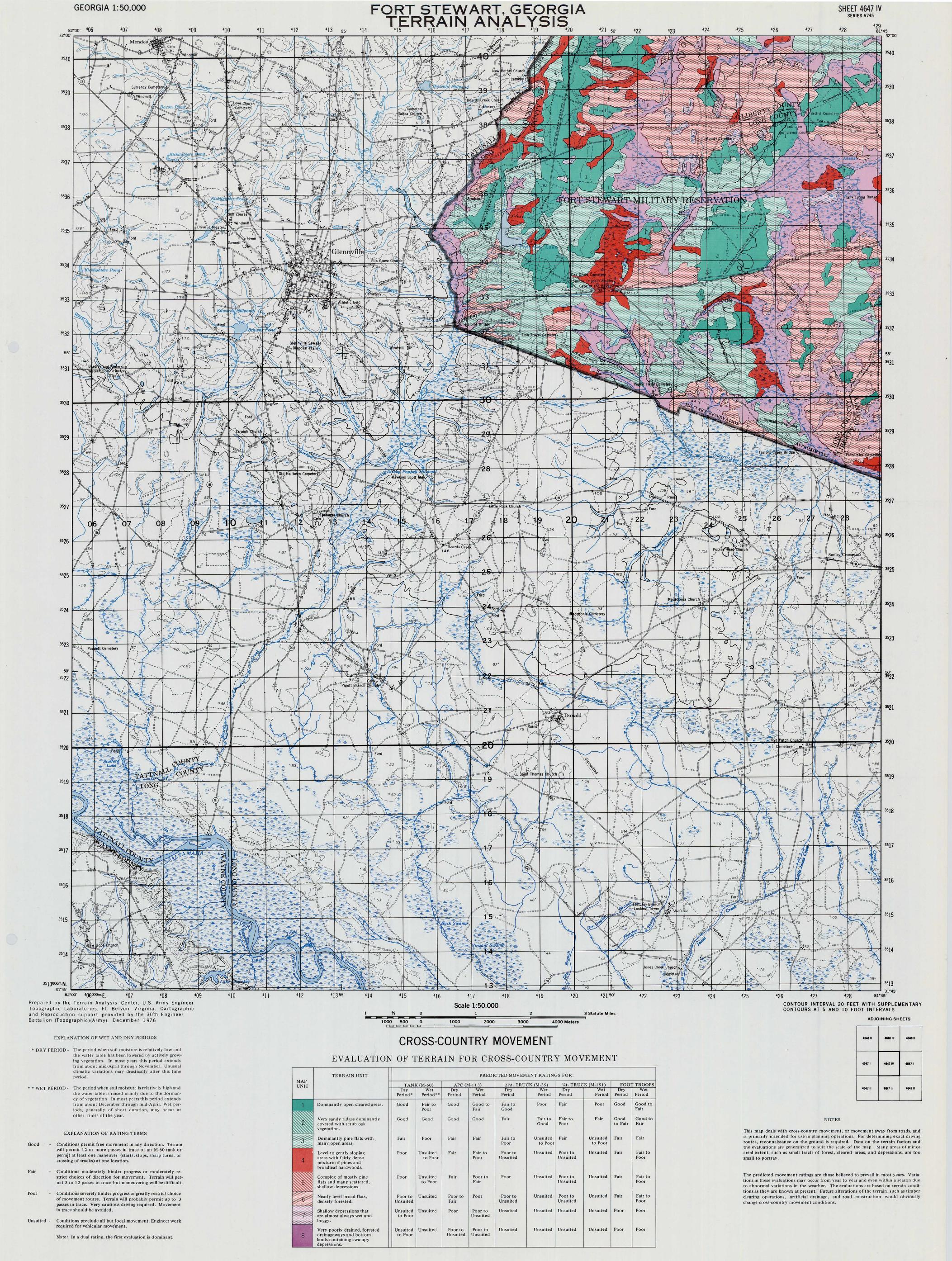
# I. Cross-Country Movement

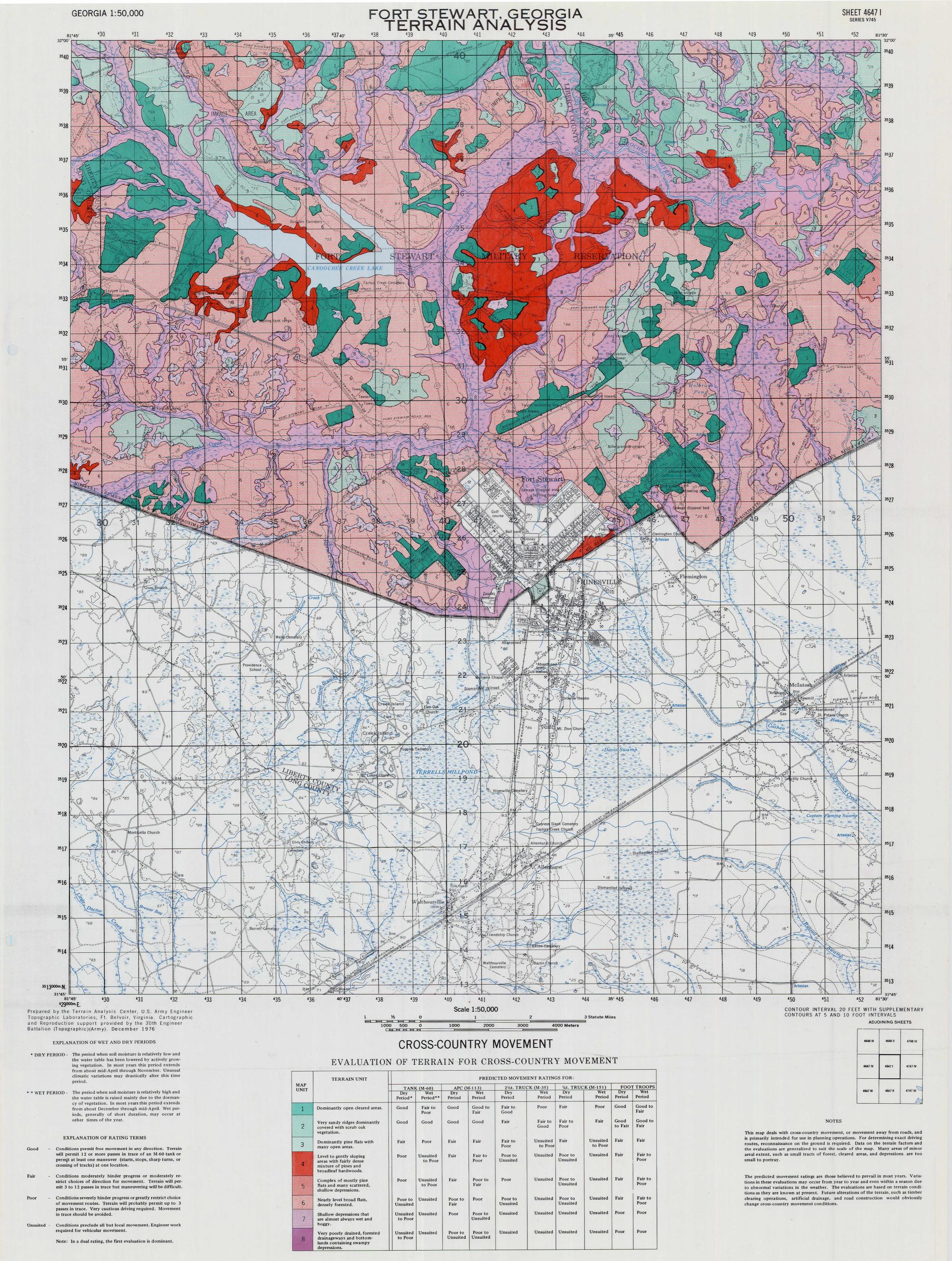
MAP UNIT	GENERALIZED TERRAIN CONDITIONS	MOVEMENT OF TRACKED VEHICLES*	MOVEMENT OF WHEELED VEHICLES**	MOVEMENT OF FOOT TROOPS
1	Dominantly open, cleared areas. Tracts mostly cleared for various military training purposes (firing ranges, maneuver areas, air landing strips, etc.). Mostly gently sloping, slightly dissected uplands in the west to nearly level or gently sloping broad ridges (slight rises) elsewhere. Slopes generally less than 4 percent. Vegetation ranges from sparse grasses and forbs to young pine plantations. Soils range from deep fine sands mainly north of the Canoochee River to silty and clayey sands elsewhere. Water table seasonally high only at lower elevations. Map unit includes cleared wildlife areas, a few pecan groves and some small wet depressions.	Generally easy for long distances in any direction for both tank and APC when soils dry. During wet period, 1/movement of tank somewhat slowed by soft soils except in the very sandy areas. Movement of APC essentially unaffected by wet soils.	Fairly easy but scattered forest remnants and depressions must be bypassed. Cautionary driving required in order to avoid stumps and logs hidden in grassy or weedy growth. Soft soils during wet period of year severely slow movement.	Unrestricted except slightly slowed for brief periods during wet period when soils are unusually soft.
2	Very sandy ridges dominantly covered by scrub oak vegetation; occur primarily north of Canoochee River. Slopes range from 0 to 8 percent; most between 2 and 4 percent. Some ridges have dunelike topography. Sparse stands of scrub oaks cover most of the ridges. Soils composed mainly of deep, almost pure, fine sands. Ground surface very loose, particularly where disturbed by traffic. Sandy surface soils dry throughout year except during and immediately after rains. Map unit includes some poorly drained depressions and shallow drainageways.	Unrestricted for both tank and APC movement throughout year. Locally, scrub oaks may restrict visibility. Most trees can be pushed over with ease. Locally, scraggly branches with foilage interfere with visibility. Depressions can usually be bypassed and drainageways crossed, using caution.	Moderately hindered by scrub oak vegetation and loose sand. Ordinarily, four-wheel drive recommended, particularly when going upslope. Careless drivers can easily immobilize their vehicles by allowing wheels to spin and dig down into dry, loose sand. Movement conditions improved when sand is wet or moist.	Slightly to moderately hindered by scraggly growth of trees and loose sand. Slowed by some drainageways during wet period of year.
3	Dominantly pine flats with many open areas. Slopes generally less than 2 percent. Tree spacing highly varied but mostly widely spaced, ranging about 4.5 to 9.0 m (15-30 ft) apart. Stem diameters vary mostly within the range of 10 to 30 cm (4-12 in) diameter breast height. Low bushes and palmetto main components of thin understory. Soils are silty and loamy sands; most have a seasonal high water table. Map unit includes many small, poorly drained depressions and sluggish drains.	Moderately hindered by trees, poorly drained depressions and drains. Tanks and APCs can generally pick their way through trees by frequently changing direction. Open areas present few limitations. Swampy depressions must ordinarily be bypassed at all times. Advisable for tanks to avoid movement in trace when soils wet.	Moderately to severely hindered by trees, depressions and drains. Movement feasible when soils dry and firm but tortuous driving normally required. Unsuited movement conditions generally prevail during wet period of year due to combination of soft soils and closely spaced trees.	Moderately slowed by trees, bushes, depressions and drains.
4	Level to very gently sloping areas covered with fairly dense mixture of pines and broadleaf hardwoods; pines the dominant component of the forest mix. Diameter of tree trunks about the same as in map unit 3, but spacing somewhat closer. Thin to dense understory of bushes and vines. Soils sandy and with a seasonal high water table. Scattered depressions or swamps comprise perhaps as much as 10 percent of the map unit.	Tank movement severely restricted by trees. Many trees can be pushed over fairly easy but overall forward progress slow. The APC, due to excellent maneuverability, only moderately hindered. During wet period when soil strength low due to high water table, tank movement essentially impractical but still feasible for APC.	Severely restricted by trees and wet depressions. In some areas, size and density of trees precludes movement for both 2½ t and ¼ t truck. During wet period of year soft soils combined with trees generally precludes movement.	Moderately slowed by combined effects of trees, understory of bushes and vines, and wet, miry depressions.
5	Complex of mostly pine flats and many scattered shallow depressions. Areas nearly level with slopes less than 2 percent. The two terrain types occur in such an intricate pattern that it is not practical to separate them at scale of mapping. Pine trees in all stages of growth but most 10 to 20 cm (4-8 in) in diameter and variably spaced; significant tracts of mostly open grassy or brushy areas. Sandy soils on flats commonly have a seasonal high water table, whereas depressions are wet most of year.	Severely hindered by many wet depressions. Tank movement generally limited to slightly higher lying pine flats. APC moderately restricted by same terrain factors. During wet period, tank movement very difficult to impractical due to soft ground conditions induced by high water table. Movement of APC feasible although degraded by low bearing strength of soils.	Very difficult going at all times due to necessity of bypassing wet depressions and moving through pines in varied stages of growth and spacing. Soft soils, resulting from seasonal high water table, generally precludes movement during wet period.	Moderately hindered by soft miry soils in wet depressions.
6	Nearly level broad flats, densely forested. Closely spaced trees are dominantly pine, averaging more than 15 cm (6 in) in diameter. Undergrowth and ground cover are commonly quite dense, particularly along border areas adjacent to drains and swampy ground. Soils are sandy with a high water table during the wet period. The seasonal high water table is more persistent in the eastern half of the reservation than in the western section. Map unit includes small swampy drains and wet depressions.	Tank movement severely slowed in places precluded by closely spaced trees. Most trees cannot be pushed over. APC moderately slowed by trees. High performance characteristics generally allows APC to move even during wet period; tank movement infeasible during this period. Poor visibility due to thick undergrowth contributes to slow going for both vehicles.	Feasible but generally not practical for long distances due to tortuous going imposed by closely spaced trees. Risk of vehicle damage high. Soft soils, induced by high water table, precludes movement during wet period. Visibility impaired in most places by undergrowth.	Moderately hindered by undergrowth.  Additional hindrance from soft soils in drains and depressions.
7	Shallow depressions that are almost always wet and boggy. The ones depicted in this map unit occur mainly in areas formerly cleared of tree growth. Only the sizeable ones have been delineated. Vegetation mainly composed of water-tolerant grasses, sedges, young gums and small cypress. Soils sandy but contain relatively high amounts of silt and organic material. Some depressions dry out at the surface but soil bearing strength remains very low.	Almost always precluded for tanks by wet, miry soils. Movement of APCs feasible in some depressions but nearly always with risk of immobilization. During long dry spells some depressions may be solid enough to allow crossing even with tanks. Movement in trace to be avoided. Movement during wet period not feasible for APC except with reconnaissance.	Risk of immobilization unacceptably high for both 2½ t and ¼ t truck.	Slow and difficult due to soft miry soils but seldom precluded. Long dry spells allow many soils to become sufficiently firm to ease movement.

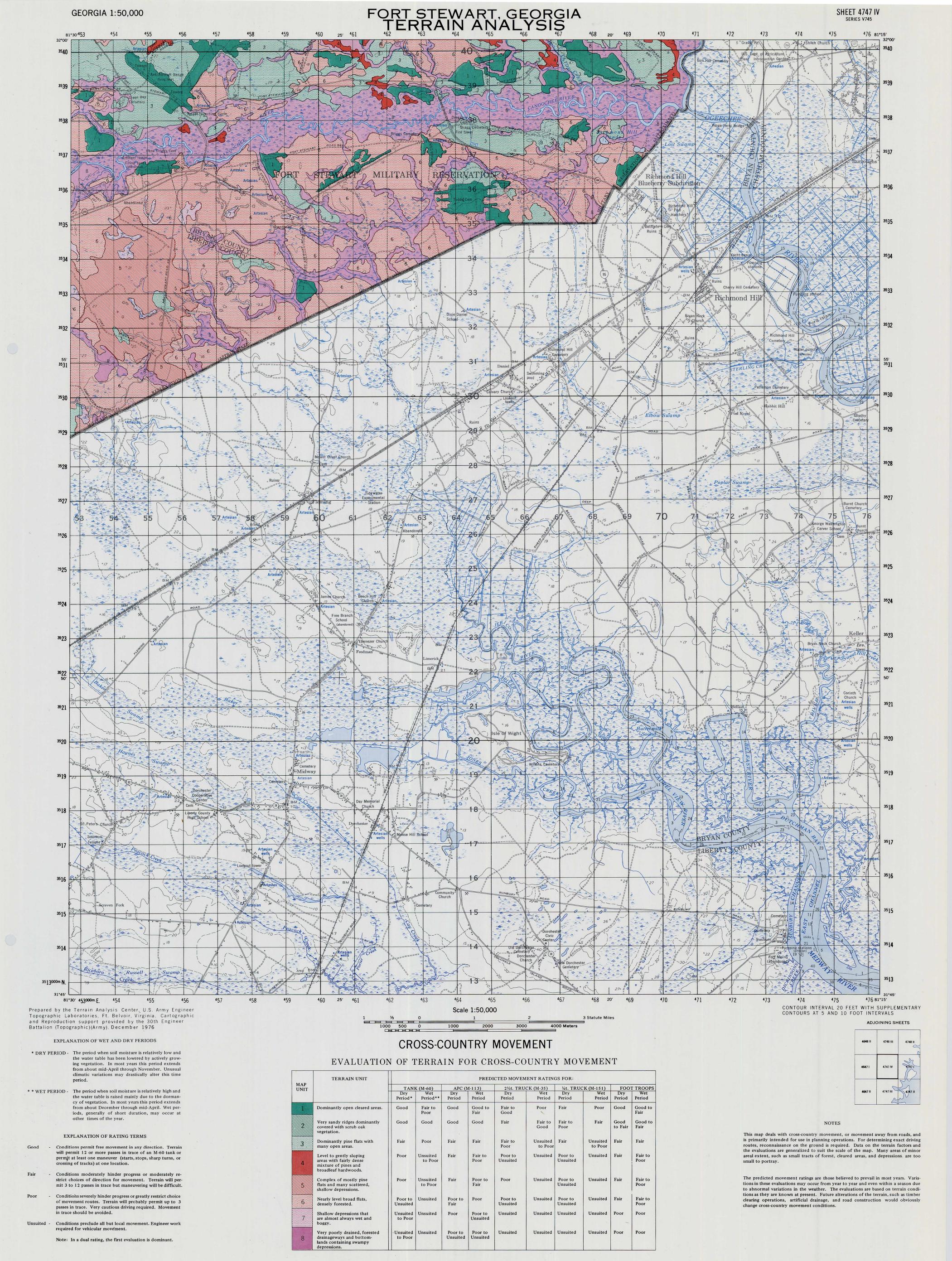












# J. Lines of Communication

#### 1. Roads

The complex road network of Fort Stewart consists of several hard surfaced roads, many tank trails, and numerous improved and unimproved dirt roads. Together, they provide Fort Stewart with over 1,255 kilometers (780 miles) of roads.

Because of their similar characteristics, tank trails, improved dirt roads and unimproved dirt roads have been treated in groups rather than individually.

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	ROUTE L	OC \TION				SURF		SHOU		
ROUTE NUMBER AND NAME	GRID RE FROM	FERENCE TO	LENGTH OF SEGMENT	MILITARY LOAD CLASSIFICATION	ROUTE TYPE	CONSTRUCTION MATERIALS	WIDTH/ CONDITION	CONSTRUCTION MATERIALS	WIDTH/ CONDITION	REMARKS
144	166323	686361	57.9 km (36 mi)		All weather	Bituminous	7.3 m (24 ft); good	Sod	1.8 m (6 ft); good	
119	410521	426242	25.7 km (16 mi)		All weather	Bituminous	7.3 m (24 ft); good	Sod	1.8 m (6 ft); good	
47	435297	455264	3.8 km (2.4 mi)		All weather	Bituminous	6.7 m (22 ft); good	Sod	1.8 m (6 ft); good	
111	425248	429295	5.6 km (3.5 mi)		All weather	Bituminous	6.7 m (22 ft); good	Sod	1.8 m (6 ft); good	
42	382511	399490	2.6 km (1.6 mi)		All weather	Bituminous	6.7 m (22 ft); good	Sod	1.5 m (5 ft); good	
inciple ntonment Roads										
15th Street	399255	405265	1 km (.6 mi)		All weather	Bituminous	6.7 m (22 ft); good	Sod	1.8 m (6 ft); good	
lson Avenue	409265	428243	3 km (1.9 mi)		All weather	Bituminous	6.7 m (22 ft); good	Sod	1.8 m (6 ft); good	
ro Road	423260	423250	.8 km (.5 mi)		All weather	Bituminous	6.7 m (22 ft); good	Sod	1.8 m (6 ft); good	
ndquist Road	<b>4</b> 21258	429257	.8 km (.5 mi)		All weather	Bituminous	6.7 m (22 ft); good	Sod	1.8 m (6 ft); good	
rmon Road	430257	446273	2.6 km (1.6 mi)		All weather	Bituminous	6.7 m (22 ft); good	Sod	1.8 m (6 ft); good	
nk Trails			434.5 km (270 mi)		All weather	Sandy clay	9.1 m (30 ft); good	No shoulders		Longitudinal and lateral drainage provided. Crown of 45.7 cm - 61 cm (18 in - 24 in).
proved Dirt ads			539.1 km (335 mi)		Fair weather; may become slippery and miry after heavy rains, particularly during the winter and	Sandy clay	4.9 m - 9.1 m (16 ft - 30 ft); good to poor	Dirt		
nimproved Dirt oads			177 km (110 mi)		spring.  Fair weather; may become slippery and miry after heavy rain, particularly during the winter and spring.	Sandy clay	3.4 m - 4.9 m (11 ft - 16 ft); good to poor	Dirt		

## Roads (Bridge Table)

BRIDGE NUMBER/NAME	ROUTE DESIGNATION	GRID REFERENCE	FEATURE CROSSED	MILITARY LOAD CLASSIFICATION	DIMENSIONS	CLEARANCE	TYPE/ CONSTRUCTION MATERIALS	CONDITION
1	23	306393	Canoochee Creek	70	62.5 m (205 ft) long; 7.6 m (25 ft) wide; roadway width 7 m (23 ft)	Unlimited vertical; 7 m (23 ft) hori- zontal	Trestle; wood timber	Good
2	40	385280	Mill Creek	70	15.2 m (50 ft) long; 6.3 m (20 ft 7 in) wide; roadway width 5.7 m (18 ft 7 in)	Unlimited vertical; 5.7 m (18 ft 7 in) horizontal	Trestle; wood timber	Good
3	40	382284	Taylors Creek	70	18.3 m (60 ft) long; 5.7 m (18 ft 8 in) wide; roadway width 5.1 m (16 ft 8 in)	Unlimited vertical; 5.1 m (16 ft 8 in) horizontal	Trestle; wood timber	Good
4	40	382286	Taylors Creek	70	18.6 m (61 ft) long; 6 m (19 ft 9 in) wide; roadway width 5.4 m (17 ft 9 in)	Unlimited vertical; 5.4 m (17 ft 9 in) horizontal	Trestle; wood timber	Good
5	40	382288	Taylors Creek	70	33.5 m (110 ft) long; 5.7 m (18 ft 8 in) wide; roadway width 5.1 m (16 ft 8 in)	Unlimited vertical; 5.1 m (16 ft 8 in) horizontal	Trestle; wood timber	Good
6 aylors Creek ridge	32	265285	Taylors Creek	70	35.7 m (117 ft 2 in) long; 7.1 m (23 ft 2 in) wide; roadway width 6.5 m (21 ft 2 in)	Unlimited vertical; 6.5 m (21 ft 2 in) horizontal	Trestle; wood timber	Good
7	33	234354	Strickland Creek	70	6.8 m (22 ft 2 in) long; 6.7 m (22 ft) wide; roadway width 6.1 m (20 ft)	Unlimited vertical; 6.1 m (20 ft) hori- zontal	Trestle; wood timber	Good
8	33B	234365	Strickland Creek	70	<pre>6.2 m (20 ft 4 in) long; 6.8 m (22 ft 3 in) wide; roadway width 6.2 m (20 ft 3 in)</pre>	Unlimited vertical; 6.2 m (20 ft 3 in) horizontal	Trestle; wood timber	Good
9	34	255360	Strickland Creek	70	13.7 m (45 ft) long; 6.1 m (20 ft) wide; roadway width 5.5 m (18 ft)	Unlimited vertical; 5.5 m (18 ft) hori- zontal	Trestle; wood timber	Good
10	20	272426	Tributary of Taylors Creek	50	2.6 m (8 ft 6 in) long; 6.1 m (20 ft) wide; roadway width 5.5 m (18 ft)	Unlimited vertical; 5.5 m (18 ft) hori- zontal	Trestle; wood timber	Good
11	129	308421	Canoochee Creek	70	59.7 m (196 ft) long; 6.1 m (20 ft) wide; roadway width 5.5 m (18 ft)	Unlimited vertical; 5.5 m (18 ft) hori- zontal	Trestle; wood timber	Good
12	129	224493	Glissons Pond	70	28.3 m (92 ft 8 in) long; 6.1 m (20 ft) wide; roadway width 5.5 m (18 ft)	Unlimited vertical; 5.5 m (18 ft) hori- zontal	Trestle; wood timber	Good
13	13	235495	Canoochee Creek	70	20.6 m (67 ft 6 in) long; 5 m (16 ft 6 in) wide; roadway width 4.4 m (14 ft 6 in)	Unlimited vertical; 4.4 m (14 ft 6 in) horizontal	Trestle; wood timber	Good
14	28	349457	Unnamed	50	21.9 m (72 ft) long; 7 m (23 ft) wide; road- way width 6.4 m (21 ft)	Unlimited vertical; 6.4 m (21 ft) hori- zontal	Trestle; wood timber	Good
15	18	312511	Canoochee River	70	63.1 m (207 ft 2 in) long; 6 m (19 ft 8 in) wide; roadway width 5.4 m (17 ft 8 in)	Unlimited vertical; 5.4 m (17 ft 8 in) horizontal	Trestle; wood timber	Good
16	27	372470	Canoochee River	70	64.4 m (211 ft 2 in) long; 6.1 m (20 ft) wide; roadway width 5.5 m (18 ft)	Unlimited vertical; 5.5 m (18 ft) hori- zontal	Trestle; wood timber	Good
17	17	334465	Unnamed	70	9.1 m (30 ft) long; 6.4 m (21 ft) wide; roadway width 5.8 m (19 ft)	Unlimited vertical; 5.8 m (19 ft) hori- zontal	Trestle; wood timber	Good
18	12B	224506	Canoochee Creek	20	3.1 m (10 ft) long; 4.3 m (14 ft) wide; roadway width 3.7 m (12 ft)	Unlimited vertical; 3.7 m (12 ft) hori- zontal	Trestle; wood timber	Good
19	79	417429	Canoochee River	70	124.1 m (407 ft) long; 6.2 m (20 ft 3 in) wide; roadway width 5.6 m (18 ft 3 in)	Unlimited vertical; 5.6 m (18 ft 3 in) horizontal	Trestle; wood timber	Good

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# 1. Roads (Bridge Table)

BRIDGE NUMBER/NAME	ROUTE DESIGNATION	GRID REFERENCE	FEATURE CROSSED	MILITARY LOAD CLASSIFICATION	DIMENSIONS	CLEARANCE	TYPE/ CONSTRUCTION MATERIALS	CONDITION
20	79	419432	Canoochee River	70	64 m (210 ft) long; 6.2 m (20 ft 6 in) wide; roadway width 5.6 m (18 ft 6 in)	Unlimited vertical; 5.6 m (18 ft 6 in) horizontal	Trestle; wood timber	Good
21	79	419431	Canoochee River	70	32 m (105 ft) long; 6.2 m (20 ft 6 in) wide; roadway width 5.6 m (18 ft 6 in)	Unlimited vertical; 5.6 m (18 ft 6 in) horizontal	Trestle; wood timber	Good
22	<b>42</b>	426489	Boggy Pond	20	<pre>4.2 m (13 ft 7 in) long; 4.6 m (15 ft) wide; roadway width 4 m (13 ft)</pre>	Unlimited vertical; 4 m (13 ft) hori- zontal	Trestle; wood timber	Good
23	42	441486	Boggy Pond	70	9.1 m (30 ft) long; 6.7 m (22 ft) wide; roadway width 6.1 m (20 ft)	Unlimited vertical; 6.1 m (20 ft) hori- zontal	Trestle; wood timber	Good
24	79	484426	Savage Creek	<b>70</b>	21.9 m (72 ft) long; 7.3 m (24 ft) wide; roadway width 6.7 m (22 ft)	Unlimited vertical; 6.7 m (22 ft) hori- zontal	Trestle; wood timber	Good
25	40	373373	Strum Bay	70	3.7 m (12 ft) long; 6.1 m (20 ft) wide; roadway width 5.5 m (18 ft)	Unlimited vertical; 5.5 m (18 ft) hori- zontal	Trestle; wood timber	Good
26	22	402365	Strum Bay	70	9.1 m (30 ft) long; 6.7 m (22 ft) wide; roadway width 6.1 m (20 ft)	Unlimited vertical; 6.1 m (20 ft) hori- zontal	Trestle; wood timber	Good
27	129E	403348	Canoochee Creek	70	129.2 m (424 ft) long; 6 m (19 ft 8 in) wide; roadway width 5.4 m (17 ft 8 in)	Unlimited vertical; 5.4 m (17 ft 8 in) horizontal	Trestle; wood timber	Good
28	144	398332	Taylors Creek	70	18.4 m (60 ft 3 in) long; 6.4 m (21 ft 2 in) wide; roadway width 5.8 m (19 ft 2 in)	Unlimited vertical; 5.8 m (19 ft 2 in) horizontal	Trestle; wood timber	Good
29	144	402332	Taylors Creek	70	50.3 m (165 ft) long; 6 m (19 ft 7 in) wide; roadway width 5.4 m (17 ft 7 in)	Unlimited vertical; 5.4 m (17 ft 7 in) horizontal	Trestle; wood timber	Good
30	Inner Tank Trail	410258	Drain Outfall	70	3.0 m (10 ft) long; 6.7 m (22 ft) wide; roadway width 6.1 m (20 ft)	Unlimited vertical; 6.1 m (20 ft) hori- zontal	Trestle; wood timber	Good
31	Inner Tank Trail	448268	Melvin Swamp	70	6.0 m (19 ft 7 in) long; 10.5 m (34 ft 5 in) wide; roadway width 9.9 m (32 ft 5 in)	Unlimited vertical; 9.9 m (32 ft 5 in) horizontal	Trestle; wood timber	Good
32	72	494408	Savage Creek	20	50.3 m (165 ft) long; 4.3 m (14 ft 3 in) wide; roadway width 3.7 m (12 ft 3 in)	Unlimited vertical; 3.7 m (12 ft 3 in) horizontal	Trestle; wood timber	Good
33	<b>79</b> .	497431	Tributary of Savage Creek	70	<pre>12.2 m (40 ft) long; 7.6 m (25 ft) wide; roadway width 7 m (23 ft)</pre>	Unlimited vertical; 7 m (23 ft) hori- zontal	Trestle; wood timber	Good
34	59	524386	Savage Creek	50	16.5 m (54 ft) long; 5.7 m (18 ft 10 in) wide; roadway width 5.1 m (16 ft 10 in)	Unlimited vertical; 5.1 m (16 ft 10 in) horizontal	Trestle; wood timber	Good
35	59	528388	Savage Creek	50	6.1 m (20 ft) long; 6.9 m (22 ft 9 in) wide; roadway width 6.3 m (20 ft 9 in)	Unlimited vertical; 6.3 m (20 ft 9 in) horizontal	Trestle; wood timber	Good
36	68	568374	Canoochee River	70	45.7 m (150 ft) long; 6.7 m (22 ft) wide; roadway width 6.1 m (20 ft)	Unlimited vertical; 6.1 m (20 ft) hori- zontal	Trestle; wood timber	Good
37	59	564384	Canal	70	4.6 m (15 ft) long; 6.7 m (22 ft) wide; roadway width 6.1 m (20 ft)	Unlimited vertical; 6.1 m (20 ft) hori- zontal	Trestle; wood timber	Good
38	68	567369	Canoochee River	70	64.0 m (210 ft) long; 6.1 m (20 ft) wide; roadway width 5.5 m (18 ft)	Unlimited vertical; 5.5 m (18 ft) hori- zontal	Trestle; wood timber	Good

1. Roads (Bridge Table)

BRIDGE NUMBER/NAME	ROUTE DESIGNATION	GRID REFERENCE	FEATURE CROSSED	MILITARY LOAD CLASSIFICATION	DIMENSIONS	CLEARANCE	TYPE/ CONSTRUCTION MATERIALS	CONDITION
39	67	634389	Canoochee River	3	32.6 m (107 ft) long; 8.1 m (26 ft 9 in) wide; roadway width 7.5 m (24 ft 9 in)	Unlimited vertical; 7.5 m (24 ft 9 in) horizontal	Trestle; wood timber	Fair
40	67	637382	Canoochee River	3	129.5 m (425 ft) long; 6.9 m (22 ft 10 in) wide; roadway width 6.3 m (20 ft 10 in)	Unlimited vertical; 6.3 m (20 ft 10 in) horizontal	Trestle; wood timber	Fair
41	67	636385	Canoochee River	3	60.7 m (199 ft) long; 7 m (23 ft) wide; road- way width 6.4 m (21 ft)	Unlimited vertical; 6.4 m (21 ft) hori- zontal	Trestle; wood timber	Fair
42	67	638381	Canoochee River	3	30.5 m (99 ft ll in) long; 7.2 m (23 ft 9 in) wide; roadway width 6.6 m (21 ft 9 in)	Unlimited vertical; 6.6 m (21 ft 9 in) horizontal	Trestle; wood timber	Fair
43	56	635360	Unnamed	70	6.1 m (20 ft) long; 6.4 m (21 ft) wide; roadway width 5.8 m (19 ft)	Unlimited vertical; 5.8 m (19 ft) hori- zontal	Trestle; wood timber	Good
44	59	668402	Clyde Creek	70	27.8 m (91 ft 4 in) long; 6.7 m (22 ft) wide; roadway width 6.1 m (20 ft)	Unlimited vertical; 6.1 m (20 ft) hori- zontal	Trestle; wood timber	Good
45	62	625431	Clyde Creek	40	32.5 m (106 ft 8 in) long; 6.1 m (20 ft) wide; roadway width 5.5 m (18 ft)	Unlimited vertical; 5.5 m (18 ft) hori- zontal	Trestle; wood timber	Good
46	64	609477	Unnamed	20	3.6 m (11 ft 8 in) long; 7.2 m (23 ft 6 in) wide; roadway width 6.6 m (21 ft 6 in)	Unlimited vertical; 6.6 m (21 ft 6 in) horizontal	Trestle; wood timber	Good
47	42	390505	Brushy Branch	70	4.6 m (15 ft) long; 6.1 m (20 ft) wide; roadway width 5.5 m (18 ft)	Unlimited vertical; 5.5 m (18 ft) hori- zontal	Trestle; wood timber	Good
48	43	376488	Otter Hole Branch	70	9.1 m (30 ft) long; 6.7 m (22 ft) wide; roadway width 6.1 m (20 ft)	Unlimited vertical; 6.1 m (20 ft) hori- zontal	Trestle; wood timber	Good
49	30	332357	Canoochee Creek	70	31.4 m (103 ft 2 in) long; 7.2 m (23 ft 8 in) wide; roadway width 6.6 m (21 ft 8 in)	Unlimited vertical; 6.6 m (21 ft 8 in) horizontal	Trestle; wood timber	Good
50	144	313347	Drainage Canal	70	3.7 m (12 ft) long; 6.1 m (20 ft) wide; roadway width 5.5 m (18 ft)	Unlimited vertical; 5.5 m (18 ft) hori- zontal	Trestle; wood timber	Good
51	20	294370	Strickland Pond	70	21.6 m (71 ft) long; 6.9 m (22 ft 9 in) wide; roadway width 6.3 m (20 ft 9 in)	Unlimited vertical; 6.3 m (20 ft 9 in) horizontal	Trestle; wood timber	Good
52	144	441 354	Unnamed	70	9.1 m (30 ft) long; 6 m (19 ft 7 in) wide; road- way width 5.4 m (17 ft	Unlimited vertical; 5.4 m (17 ft 7 in) horizontal	Trestle; wood timber	Good
53	11	254488	Canoochee Creek	70	7 in) 4.9 m (16 ft 2 in) long; 6.1 m (19 ft 11 in) wide; roadway width 5.5 m (18 ft)	Unlimited vertical; 5.5 m (18 ft) hori- zontal	Trestle; wood timber	Good
54	92	345270	Tributary of Taylors Creek	20	3.7 m (12 ft) long; 6.1 m (20 ft) wide; roadway width 5.5 m (18 ft)	Unlimited vertical; 5.5 m (18 ft) hori- zontal	Trestle; wood timber	Good
55	90	400258	Mill Creek	70	4.6 m (15 ft) long; 6.2 m (20 ft 6 in) wide; roadway width 5.6 m (18 ft 6 in)	Unlimited vertical; 5.6 m (18 ft 6 in) horizontal	Trestle; wood timber	Good
56	70A	498429	Unnamed	10	2.7 m (9 ft) long; 4 m (13 ft) wide; roadway width 3.4 m (11 ft)	Unlimited vertical; 3.4 m (11 ft) hori- zontal	Trestle; wood timber	Good
57	68	525418	Ditch Along FS-79	70	3.0 m (10 ft) long; 9.7 m (32 ft) wide; roadway width 9.1 m (30 ft)	Unlimited vertical; 9.1 m (30 ft) hori- zontal	Trestle; wood timber	Good
58	91	332292	Taylors Creek	30	6.1 m (20 ft) long; 6.1 m (20 ft) wide; roadway width 5.5 m (18 ft)	Unlimited vertical; 5.5 m (18 ft) hori- zontal	Trestle; wood timber	Good

1. Roads (Bridge Table)

BRIDGE NUMBER/NAME	ROUTE DESIGNATION	GRID REFERENCE	 FEATURE CROSSED	MILITARY LOAD CLASSIFICATION	DIMENSIONS	CLEARANCE	TYPE/ CONSTRUCTION MATERIALS	CONDITION
59	Cantonment Area	414280	Mill Creek Canal	70	9.1 m (30 ft) long; 7.3 m (24 ft) wide; roadway width 6.7 m (22 ft)	Unlimited vertical; 6.7 m (22 ft) hori- zontal	Trestle; wood timber	Good
60	35	273313	Unnamed	70	9.1 m (30 ft) long; 6.1 m (20 ft) wide; roadway width 5.5 m (18 ft)	Unlimited vertical; 5.5 m (18 ft) hori- zontal	Trestle; wood timber	Good
S-1	GA 144	402288	Taylors Creek		82.3 m (270 ft) long; 7.9 m (26 ft) wide; roadway width 7.3 m (24 ft)	Unlimited vertical; 7.3 m (24 ft) hori- zontal	Deck; wood sub- structure; steel stringer; con- crete deck	Good
S-2	GA 119	391337	Canoochee Creek	15 tons*	59.4 m (195 ft) long; 7.9 m (26 ft) wide; roadway width 7.3 m (24 ft)	Unlimited vertical; 7.3 m (24 ft) hori- zontal	Trestle; wood trestle; con- crete deck	Good
S-3	GA 119	390339	Canoochee Creek		61.9 m (203 ft) long; 7.9 m (26 ft) wide; roadway width 7.3 m (24 ft)	Unlimited vertical; 7.3 m (24 ft) hori- zontal	Deck; wood sub- structure; steel stringer; con- crete deck	Good
S-4	GA 119	389341	Canoochee Creek		61.6 m (202 ft) long; 7.9 m (26 ft) wide; roadway width 7.3 m (24 ft)	Unlimited vertical; 7.3 m (24 ft) hori- zontal	Deck; wood sub- structure; steel stringer; con- crete deck	Good
S-5	GA 119	379464	Tributary of Canoochee River		61.6 m (202 ft) long; 7.9 m (26 ft) wide; roadway width 7.3 m (24 ft)	Unlimited vertical; 7.3 m (24 ft) hori- zontal	Deck; wood sub- structure; steel stringer; con- crete deck	Good
S-6	GA 119	385469	Canoochee River	15 tons*	233.2 m (765 ft) long; 7.9 m (26 ft) wide; roadway width 7.3 m (24 ft)	Unlimited vertical; 7.3 m (24 ft) hori- zontal	Deck; wood and concrete	Good
S-7	GA 119	388471	Tributary of Canoochee River	15 tons*	53.9 m (177 ft) long; 7.9 m (26 ft) wide; roadway width 7.3 m (24 ft)	Unlimited vertical; 7.3 m (24 ft) hori- zontal	Deck; wood sub- structure; steel stringer; con- crete deck	Good
S-8	GA 119	394482	Boggy Pond		22.9 m (75 ft) long; 7.9 m (26 ft) wide; roadway width 7.3 m (24 ft)	Unlimited vertical; 7.3 m (24 ft) hori- zontal	Deck; wood sub- structure; steel stringer; con- crete deck	Good
S-9	GA 144	167323	Beards Creek		90.5 m (297 ft) long; 10.4 m (34 ft) wide; roadway width 7.3 m (24 ft)	Unlimited vertical; 9.1 m (30 ft) hori- zontal	Deck; steel and concrete	Good

<sup>\*</sup>Georgia State Highway load classification, not converted to military load classification

## 2. Railroads

The Fort Stewart Railroad serves the warehouse and ammunition storage areas on post. It connects to the Seaboard Coastline Railroad in Walthourville, Georgia ten miles south of the reservation. The ten mile

spur track to Walthourville and the six miles of track on post are owned and maintained by the government.

IDENTIFICATION NUMBER	SEGMENT OF TRACK GRID REFERENCE	LENGTH OF	OWNERSHIP OF LINE AND CON- DITION OF TRACK	CHARACTERISTICS OF TRACKS	SIDINGS	BALLAST MATERIAL	VOLUME OF TRAFFIC	FACILITIES
Line 1	425240-412258	2,012 m (6,600 ft)	Fort Stewart Rail- road (Government owned); in good condition.	Single track; standard gage (4 ft 8½ in or 1.44 m); maximum grade of 1% or less; maximum degree of curvature, 8°.	1,067 m (3,500 ft) long be- tween grid ref- erences 421248- 412258; 793 m (2,600 ft) long from 420259- 412258.	Crushed stone	Total number of cars per month approx. 124 for Lines 1, 2 and 3.	Coal station at grid reference 415246. Oil station at 418247.
Line 2	421248-414252	760 m (2,495 ft)	Fort Stewart Rail- road (Government owned); in good condition.	Single track; standard gage (4 ft 8½ in or 1.44 m); maximum grade of 1% or less; maximum degree of curvature, 8°.	494 m (1,620 ft) long from 416249-414252.	Crushed stone		
Line 3	421247-399255	2,500 m (8,202 ft)	Fort Stewart Rail- road (Government owned); in good condition.	Single track; standard gage (4 ft 8½ in or 1.44 m); maximum grade of 1% or less; maximum degree of curvature, 8°	783 m (2,570 ft) long from 405250-401256.  442 m (1,450 ft) long from 415248-417248.	Crushed stone		

#### 3. Airfields/Airstrips

There are two airfields and 13 airstrips on the Fort Stewart reservation. Wright Army Airfield and Camp Oliver Airfield are the only regularly used fixed-wing fields on the post. Wright Army Airfield, northeast of the main post, provides transient service for military aircraft, as well as its mission assigned aircraft; instrument approach systems are provided. The airfield has operational capabilities to serve military aircraft up to and including the C-130. The Camp Oliver Airfield, in the northwestern portion of the reservation, has a maximum weight bearing capacity for single-wheel gear aircraft of 5,700 pounds and for twin-wheel gear aircraft of 14,000 pounds.

During the early 70's, the airstrips were used for small aircraft training, but since that time the need for this type of training has declined. The 13 airstrips are used rarely now for fixed-wing aircraft, but are utilized frequently for helicopter landing zones.

MAP NUMBER AND/OR NAME; GRID REFERENCE; TYPE; AND CLASSIFICATION	ELEVATION AND STATUS	RUNWAY DESCRIPTION	TAXIWAY, PARKING, APRON, AND HARDSTAND AREA DESCRIPTION	BUILDING DESCRIPTION	POL FACILITIES	NAVIGATIONAL AIDS	REMARKS
<pre>1 Wright Army Airfield (formerly Liberty Field); 470280; Army; airfield</pre>	14.02 m (46 ft); operational	Longest Runway: 1,524 m (5,000 ft) long; 45.72 m (150 ft) wide; azimuth, 140°-320°; maximum weight bearing capacity - S60, T140, ST175, TT125; asphaltic concrete surface in good condition.  Runway 2: 1,524 m (5,000 ft) long; 30.48 m (100 ft) wide; azimuth, 50°-230°; maximum weight bearing capacity same as above.  Runway 3: 609.6 m (2,000 ft) long; 30.48 m (100 ft) wide; azimuth, 50°-230°; maximum weight bearing capacity same as above; surface material and condition same as above.  Runway 4: 609.6 m (2,000 ft) long; 30.48 m (100 ft) wide; azimuth, 140°-320°; maximum weight bearing capacity same as above; asphaltic and concrete surface in excellent condition.	Four Taxiways: 15.24 x 640.08 m (50 x 2,100 ft); 15.24 x 640.08 m (50 x 2,100 ft); 15.24 x 640.08 m (50 x 2,100 ft), asphaltic concrete in good condition; 15.24 x 259.08 m (50 x 850 ft) concrete in good condition; maximum weight bearing capacity for each same as runways.	One hanger: 33 x 24.38 m (108 x 80 ft)	Grades of fuel: US Aviation Fuel (MIL-SPECS) 115/145, JP-4; US Aviation Oils (MIL-SPECS) 1100 Reciprocating Engine Oil (MIL-L-6082). AC gas fuel storage tank of 325,000 gallons.	Control tower: 53.6 m (176 ft) above sea level and 39.6 m (130 ft) high. Omni-directional range (VOR-VHF). Precision approach radar, airfield surveillance radar. Lights: rotating beacon high intensity runway lights, high intensity approach lights, sequenced flashing lights, visual approach indicator systems.	Helipad at field. Extremely limited transient maintenance repairs available. Aerodrome is only partially covered by the USAF NOTAM System but does not maintain a military NOTAM file (For complete aerodrome information civil NOTAM's must be consulted). Taxiways D and E are abandoned.
2 Camp Oliver Airfield; 229485; Army; airfield	52 m (170 ft); operational	914 m (3,000 ft) long; 15 m (50 ft) wide; azimuth, 75 <sup>0</sup> -255 <sup>0</sup> ; maximum weight bearing capacity S6, T14; asphaltic concrete surface in good condition.	Two taxiways: 15 x 513 m (50 x 1,684 ft), 15 x 396 m (15 x 1,300 ft); surface materials and maximum weight bearing capacity same as runway.			Control tower	Helicopter landing zone at field.
3 Burton Airstrip; 467318; Army; airstrip	21 m (70 ft); nonoperational	Runway: 415.5 m (1,363 ft) long; 30.5 m (100 ft) wide; azimuth, 58 <sup>0</sup> - 238 <sup>0</sup> ; grass surface in good condi- tion.					
4 Canoochee Airstrip; 550366; Army; airstrip	9 m (29 ft); nonoperational	1,136 m (3,729 ft) long; 36.7 m (120 ft) wide; azimuth, 85 <sup>0</sup> -265 <sup>0</sup> ; grass surface in fair condition.					
5 Airstrip No. 2; 580387; Army; highway landing strip	6 m (20 ft); nonoperational	795 m (2,600 ft) long; 24.4 m (80 ft) wide; azimuth, 91 <sup>0</sup> -271 <sup>0</sup> ; concrete surface in fair condition.					
6 Airstrip No. 4; 513446; Army; highway landing strip	23 m (76 ft); nonoperational	1,723 m (5,654 ft) long; 15.2 m (50 ft) wide; azimuth, 102 <sup>0</sup> -282 <sup>0</sup> ; concrete surface in fair condition.					
7 Remagen Airstrip; 242507; Army; airstrip	51 m (166 ft); nonoperational	1,552 m (5,092 ft) long; 36.5 m (120 ft) wide; azimuth, 115 <sup>0</sup> -335 <sup>0</sup> ; dirt surface in good condition.	21.3 x 354 m (1,163 x 70 ft); azimuth, $115^{0}$ -335 $^{0}$ ; dirt surface in good condition.				Two helicopter landing zones just northwest of runway grid reference 235513. Designated as a C-130 landing zone.
8 Cartwright Army Air- field; 233514; Army; airstrip	53 m (175 ft); nonoperational	335.2 m (1,100 ft) long; 36.5 m (120 ft) wide; azimuth, 390-2210; bituminous surface in good condition.					Two helipads*
9 Brest Airstrip; 203454; Army; airstrip	55 m (182 ft); nonoperational	672.4 m (2,206 ft) long; 15.2 m (50 ft) wide; azimuth, 79 <sup>0</sup> -259 <sup>0</sup> ; grass surface in fair condition.					
10 Fero Stagefield; 176358; Army; airstrip	55 m (182 ft); nonoperational	Two runways: 366 m (1,200 ft) long; 17 m (50 ft) wide; azimuth, 21 <sup>0</sup> -210 <sup>0</sup> ; bituminous surface in good condition.	Two parking areas: 110 x 110 m (360 x 360 ft); 36 x 165 m (120 x 540 ft); bituminous surface in good condition.				
<pre>11 Jaeck Stagefield; 192338; Army; airstrip</pre>	46 m (152 ft)	Four Runways: 660 m (2,165 ft) long; 31 m (100 ft) wide; azimuth, two runways $110^{0}$ - $290^{0}$ ; two runways $20^{0}$ - $200^{0}$ ; bituminous surface in good condition.	Taxiway: 15 x 2,365 m (50 x 7,760 ft); bituminous surface in good condition.			Control tower	
<pre>12 Bastogne Airstrip; 251372; Army; airstrip</pre>	32 m (105 ft); nonoperational	696 m (2,285 ft) long; 9.7 m (32 ft) wide; azimuth, 146 <sup>0</sup> -326 <sup>0</sup> ; grass surface in good condition.					

<sup>\*</sup>See Helicopter Landing Zones.

#### 3. Airfields/Airstrips

MAP NUMBER AND/OR NAME; GRID REFERENCE, TYPE, AND CLASSIFICATION	ELEVATION AND STATUS	RUNWAY DESCRIPTION	TAXIWAY, PARKING, APRON, AND HARDSTAND AREA DESCRIPTION	BUILDING DESCRIPTION	POL FACILITIES	NAVIGATIONAL AIDS	REMARKS
13 Airstrip No. 7, 249340, highway landing strip	30 m (100 ft), nonoperational	892.2 m (2,927 ft) long, 17.1 m (56 ft) wide, azimuth, 36 <sup>0</sup> -216 <sup>0</sup> ; dirt surface in good condition.					1
14 Taylors Creek Airstrip, 288340, Army, airstrip	26 m (85 ft), nonoperational	831.1 m (2,727 ft) long; 42.7 m (140 ft) wide, azimuth, 67 <sup>0</sup> -247 <sup>0</sup> , grass surface in fair condition.		One administration building, one maintenance building, seven temporary barracks with a sixteen man capacity each	Two 12,000 gallon POL tanks with nine outlets.	Control tower	
15 Landing Strip No. 6, 370258, highway landing strip	20 m (65 ft), nonoperational	402.4 m (1,340 ft) long; 18.3 m (60 ft) wide, azimuth, 113 <sup>0</sup> -293 <sup>0</sup> ; dirt surface in good condition.					

NOTE Runway weight bearing capacity (gross weight of aircraft) is determined by adding 000 to the figure following S, T, ST, TT, TDT in the table below. Runway weight bearing capacity given is for unlimited operations. Aircraft weight higher than given requires prior permission from aerodrome controlling authority.

- S Runway weight bearing capacity for aircraft with single-wheel type landing gear (C-47, F100).
- T Runway weight bearing capacity for aircraft with twin-wheel type landing gear (C-9A).
- ST Runway weight bearing capacity for aircraft with single-tandem landing gear (C-130).
- TT Runway weight bearing capacity for aircraft with twin-tandem type (includes quadricycle) landing gear (B-52, C-135).
- TDT Runway weight bearing capacity for aircraft with twin-delta tandem landing gear (C-5).

For further information, see DOD Flight Information Publication (enroute IFR-Supplement United States).

#### 4. Helicopter Landing Zones

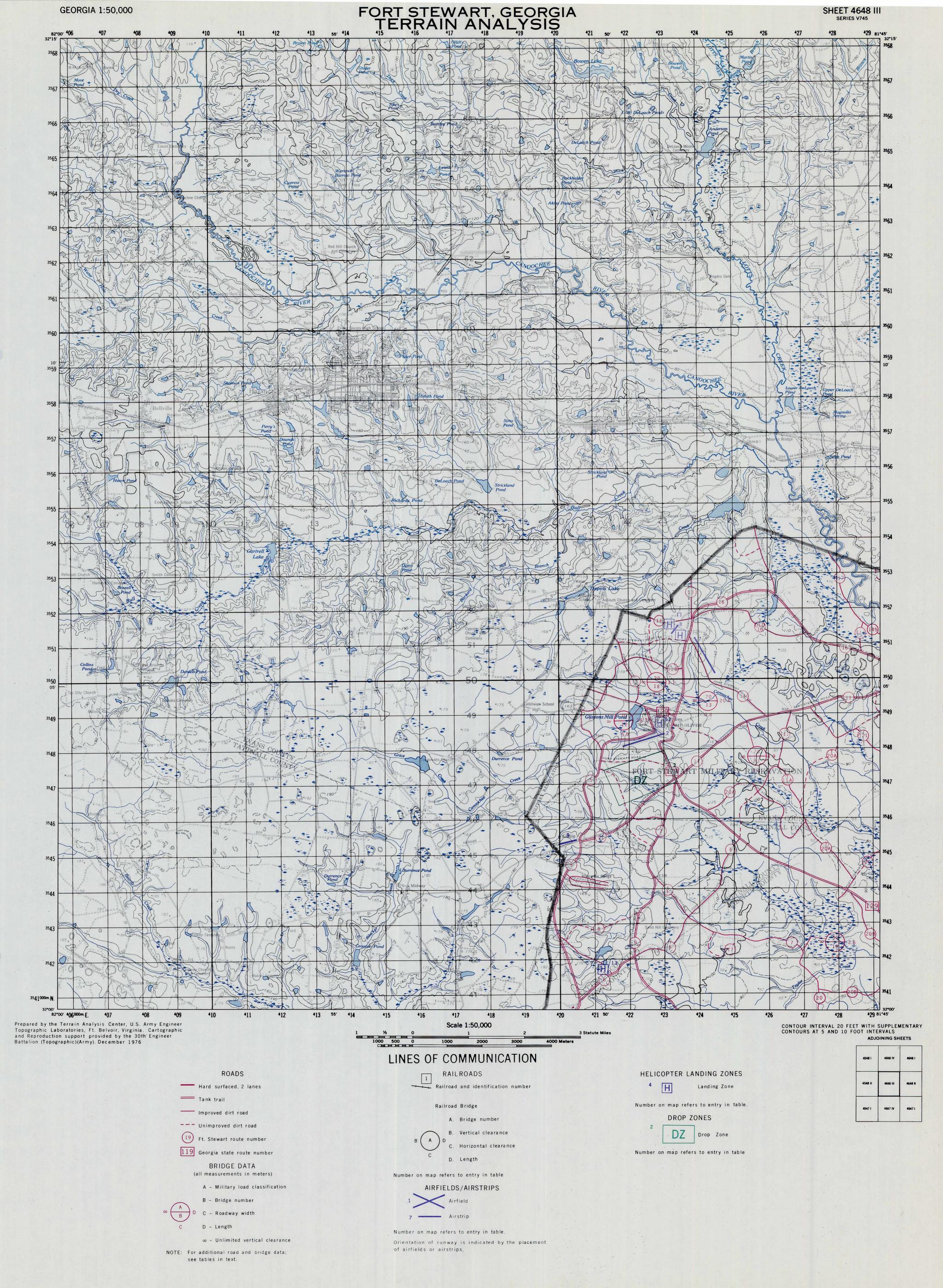
AP NUMBER AND/OR NAME	LOCATION GRID REFERENCE	DIMENSIONS	AZIMUTH	ELEVATIONS	SURFACE MATERIAL	RESTRAINTS	REMARKS
Wright Army Airfield Helipad	471278	18.2 x 18.2 m (60 x 60 ft)	Not applicable	13.7 m (45 ft)	Grass		
Evan's Heliport	520338	544 x 483 m (1,784 x 1,584 ft)	39° - 219°	9 m (29 ft)	Bituminous	Water Tank	This is the only heliport on Fort Stewart with facilities as follows capacity for 120 helicopters with maintenance facilities, classroom, control tower, mess hall, and complete utility systems.
Duc Hoa Heliport	645358	1,143 x 1,036 m (3,750 x 3,400 ft)	176° - 356°	6 m (20 ft)	Grass		Four paved and sod launching lanes and 120 parking spaces.
No 7 Helipad	558388	201.1 x 45.7 m (660 x 150 ft)	126° - 306°	7.6 m (25 ft)	Bıtumınous		
No. 6 Helipad	652443	207.3 x 45.7 m (680 x 150 ft)	152° - 332°	4.6 m (15 ft)	Bıtumınous		
No 5 Helipad	623482	201.1 x 45.7 m (660 x 150 ft)	128° - 308°	9.1 m (30 ft)	Bıtumınous		
No. 3 Helipad	520505	207.3 x 45.7 m (680 x 150 ft)	93° - 273°	25.9 m (85 ft)	Bıtumınous		
AGR No. 2 Helipad	476508	207.3 x 45.7 m (680 x 150 ft)	86° ~ 266°	22.8 m (75 ft)	Bituminous		
No. l Helipad	417498	201.1 x 45.7 m (660 x 150 ft)	59° - 239°	22.8 m (75 ft)	Bituminous		
O TAC-X Heliport	379514	1188.7 x 493 7 m (3,900 x 1,692 ft)	99° - 201°	25.9 m (85 ft)	Grass		
l two helipads	235513	109.7 x 109.7 m (360 x 360 ft)	39° - 219°	53 m (175 ft)	Bituminous		One tank trail and one unimproved dirt road cross the area.
2 Camp Oliver Helipad	229488	18.2 x 18.2 m (60 x 60 ft)	Not applicable	50.3 m (165 ft)	Grass		
3	212417	18.2 x 18.2 m (60 x 60 ft)	Not applicable	53 m (175 ft)	Grass		

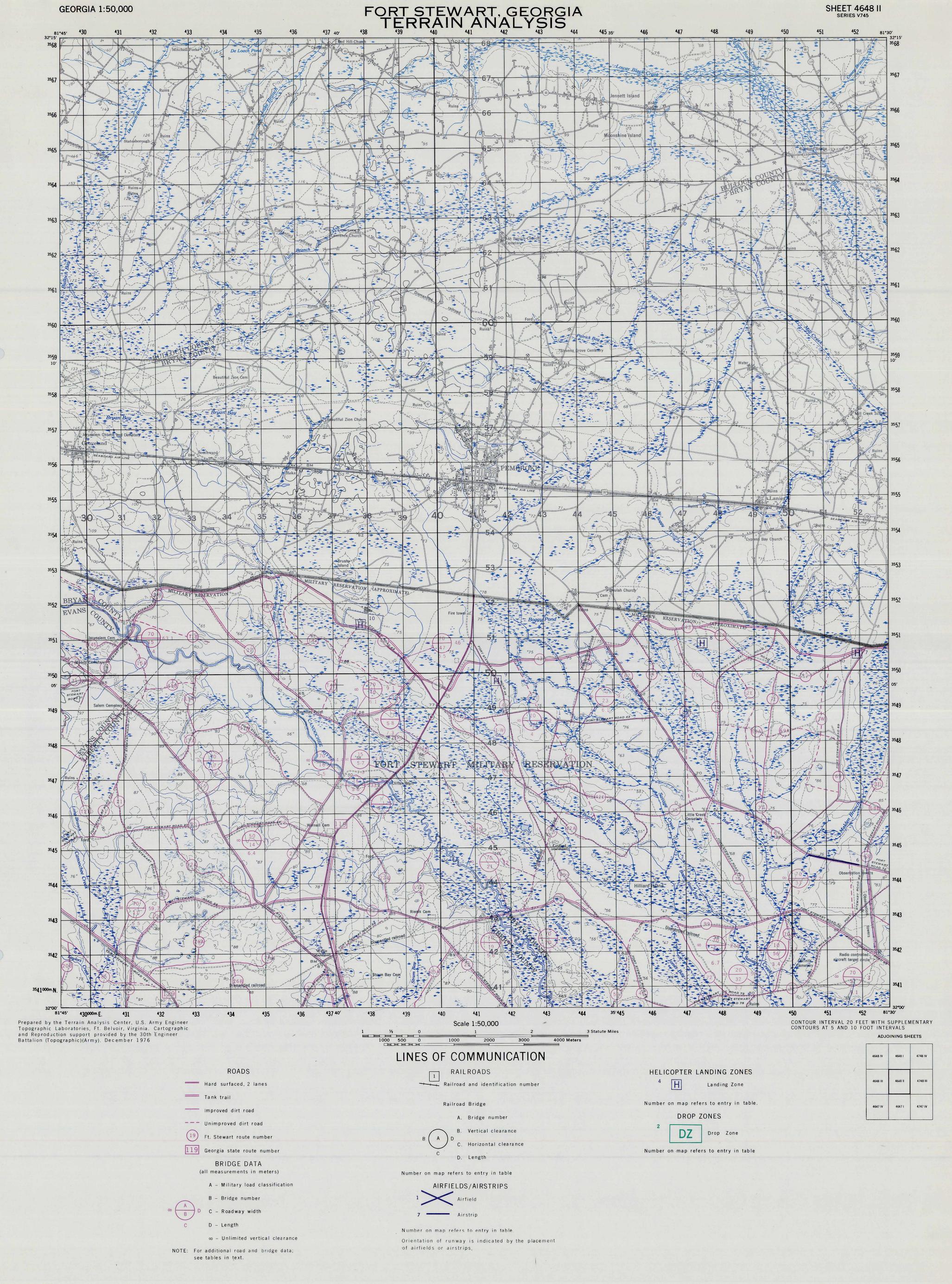
## 4. Helicopter Landing Zones

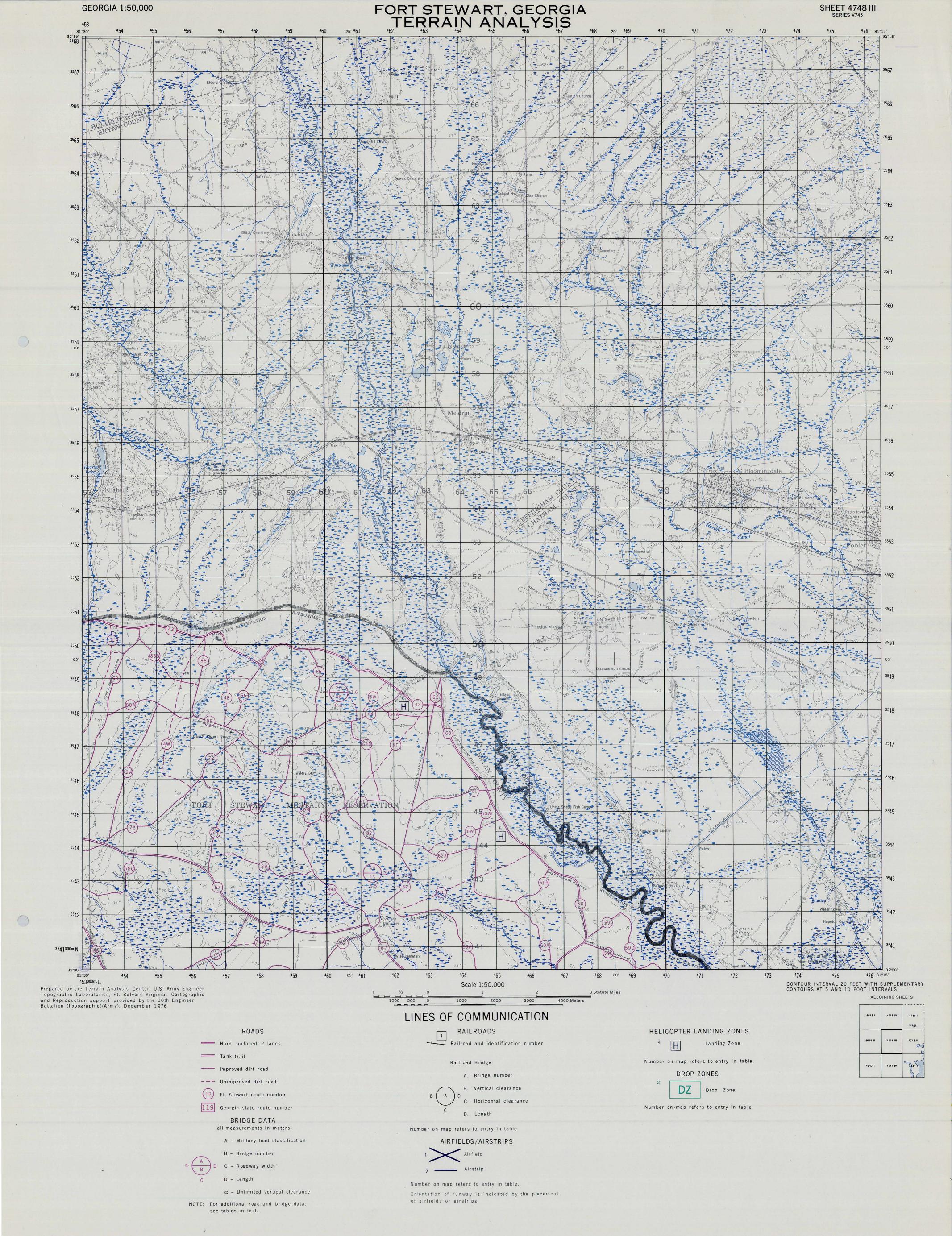
MAD NUMBER AND OR MANE	LOCATION	DIMENSIONS	6.7.T MUTU	EL EVATIONS	SURFACE	DESTRAINTS	REMARKS
IAP NUMBER AND/OR NAME	GRID REFERENCE	DIMENSIONS	AZIMUTH	ELEVATIONS	MATERIAL	RESTRAINTS	KEMAKKS
4 Jaeck Stagefield Heliport	196341	18.2 x 18.2 m (60 x 60 ft)	Not applicable	46 m (152 ft)	Grass	Control Tower	
15 Taylors Creek Heliport	286341	831.1 x 42.7 m (2,727 x 140 ft)	67° - 247°	26 m (85 ft)	Dirt	Control Tower	
16	421261	18.2 x 18.2 m (60 x 60 ft)	Not applicable	22.8 m (75 ft)	Grass		
17	425250	18.2 x 18.2 m (60 x 60 ft)	Not applicable	22.8 m (75 ft)	Grass		
18	429259	18.2 x 18.2 m (60 x 60 ft)	Not applicable	22.8 m (75 ft)	Grass		
19	432263	18.2 x 18.2 m (60 x 60 ft)	Not applicable	22.8 m (75 ft)	Grass		
20	433299	18.2 x 18.2 m (60 x 60 ft)	Not applicable	25.9 m (85 ft)	Grass		

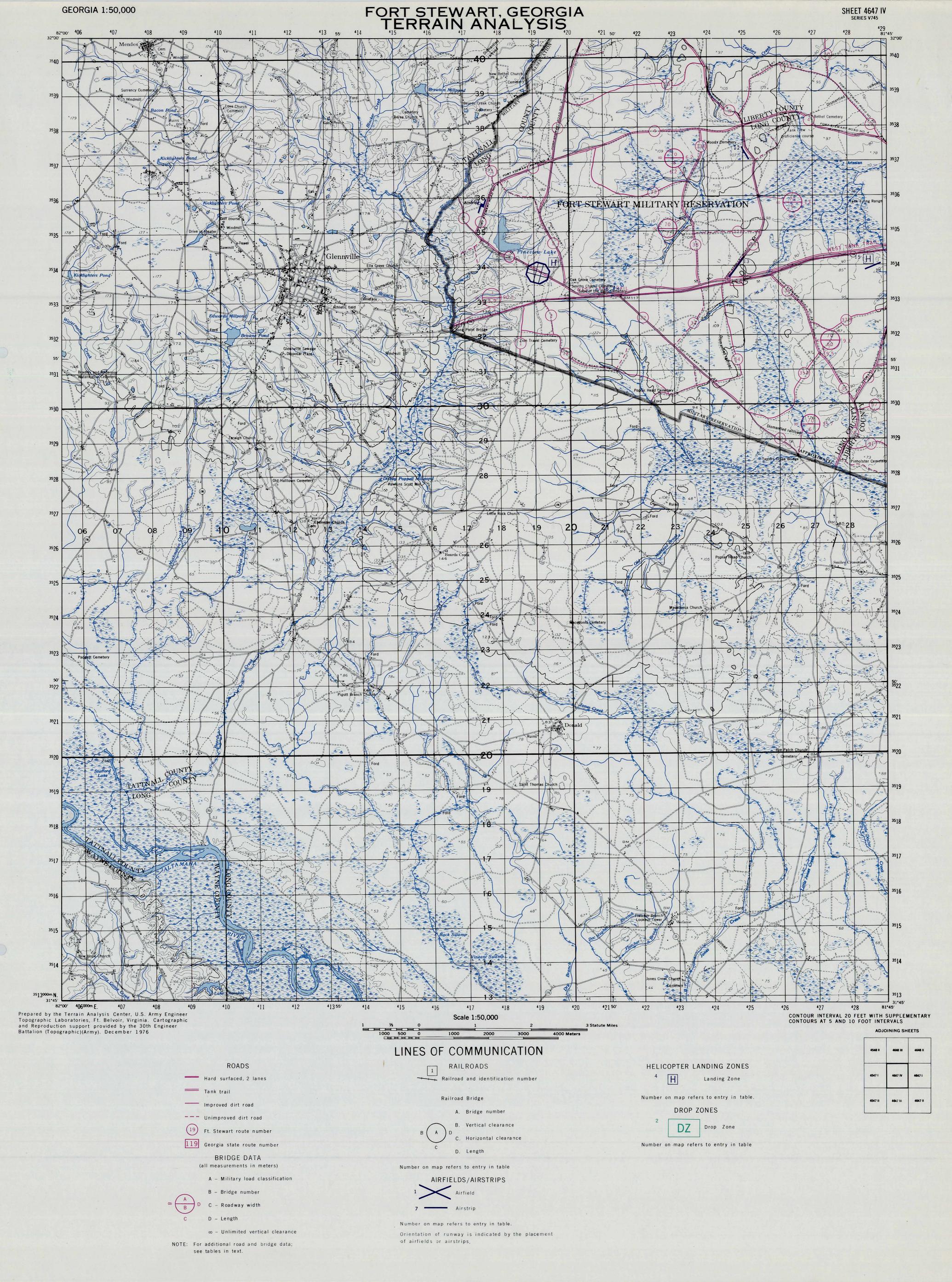
5. Drop Zones

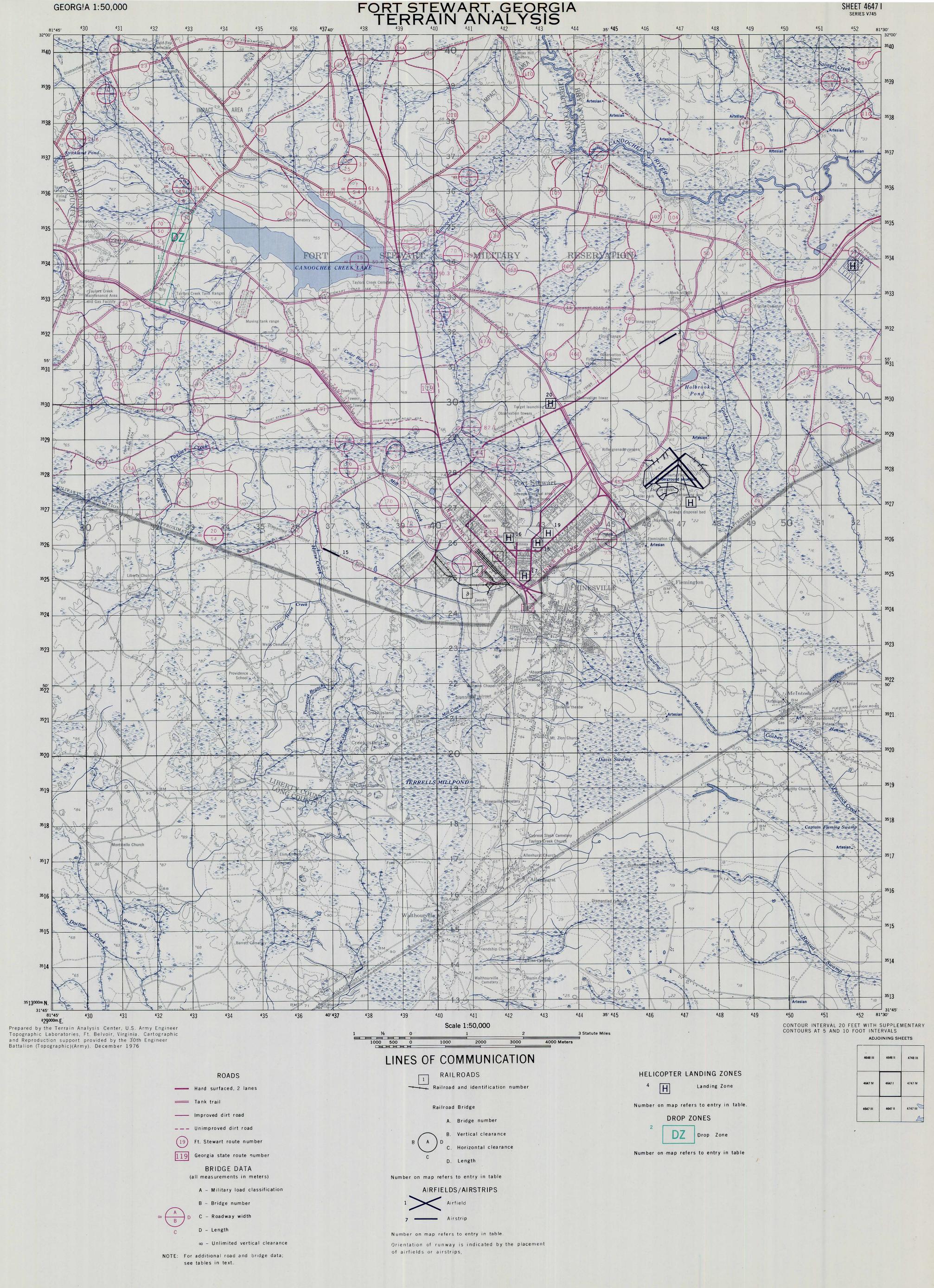
NAME AND/OR NUMBER	LOCATION GRID REFERENCE	DIMENSIONS	AZIMUTH	ELEVATION	SURFACE DESCRIPTION	AIRCRAFT OBSTRUCTIONS	REMARKS
1 Taylors Creek	325345	2,900 x 580 m (9,400 x 1,900 ft)	25° - 205°	18-24 m (60-80 ft)	Flat	No obstructions	Two tank trails and one unimproved dirt road cross this area.
2 St. Lo Range	221472	2,316 x 988 m (7,600 x 3,240 ft)	87° - 267°	50 m (160 ft)	Gently rolling. 3-5% maximum slope	No obstructions	Two unimproved dirt roads cross the area.

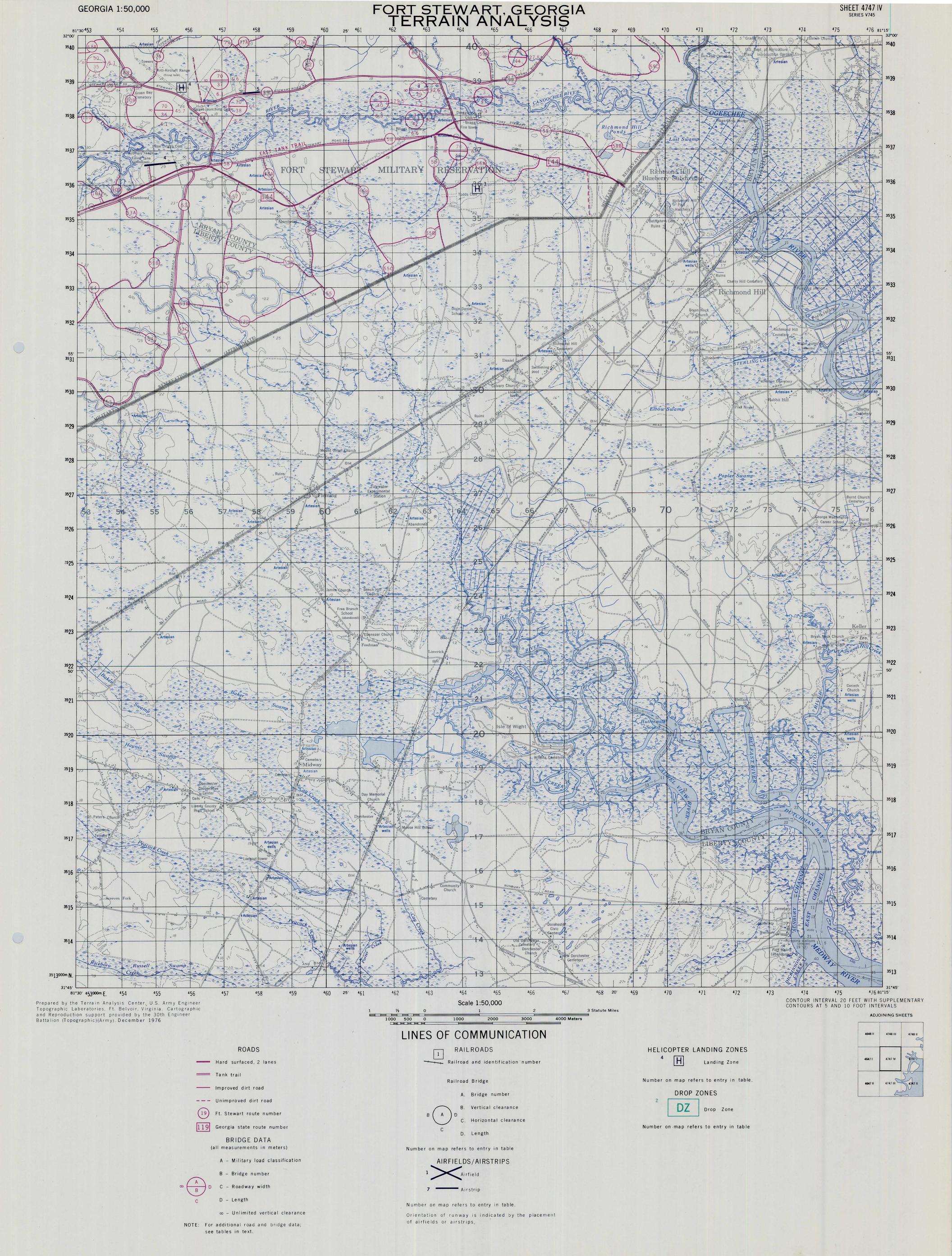












# K. Urban Areas (Cantonment Areas)

#### TROOP BILLETS

ТҮРЕ	TOTAL NUMBER	TOTAL CAPACITY	CONDITION	REMARKS
Permanent	4	1,245	Excellent	Building Nos. 2005, 2006, 2008 and 2009; all built in 1960.
Temporary	12	440	Good	3 buildings built in 1941, 9 buildings built in 1944. In addition, barracks owned by the Georgia National Guard, built in 1963-64 and in good condition, and with a total of 2,268 spaces, are being leased.
				Total spaces available June 1976. 3,953.
				1980 capacity and expansion plans: Temporary billets to be replaced by a 1,820-man barracks complex to be completed in May 1978, and a 1,609-man barracks complex in FY 1978. Demand anticipated for 7,653 personnel will be met by June 1978, but a shortfall of 1,256 spaces will exist in June 1977, when personnel demand is projected to be 5,773.

#### QUARTERS

ТҮРЕ	TOTAL NUMBER AND CAPACITY	REMARKS
Bachelor Officers Quarters	25 spaces as of June 1976, 11 of which for WAC per- sonnel, and 14 of which in trailers.	Estimated 211 spaces required by June 1977. No expansion plans (expected shortfall: 186 spaces). Estimated 211 spaces required by June 1978, with 100 spaces to be added (expected shortfall. 86 spaces).
Bachelor Enlisted Quarters	98 spaces as of June 1976, 11 of which for WAC per- sonnel, and 32 of which in trailers.	Estimated 156 spaces required by June 1977. No expansion plans (expected shortfall: 58 spaces).
Officers Family Quarters	48 two-bedroom, 104 three-bedroom and 20 four-bedroom occupied as of June 1976.  One four-bedroom quarter not occupied.	4 four-bedroom units to be added by January 1978 and 100 three-bedroom units to be added by January 1979. Total units by January 1979. 277
Enlisted Family Quarters	60 two-bedroom, 390 three-bedroom and 90 four-bedroom quarters occupied as of June 1976.	320 two-bedroom and 80 four-bedroom units to be added by January 1977, 400 two-bedroom, 100 three-bedroom, 226 four-bedroom and 20 five-bedroom units to be added by January 1978, and 200 two-bedroom and 200 three-bedroom units to be added by January 1979. Cumulative total units by January 1979: 2,086.
		Anticipated total requirements of family quarters (not statistically separated between officers and enlisted men) by June 1977 (and remaining at same level through June 1979); 5,176 units. Net expected shortfalls 4,063 units in 1977, 3,313 units in 1978, and 2,813 units in 1979. The shortfall will need to be met by off-post housing, which will be made tighter by the expectation of a need for about 676 off-post housing units for DA civilian employees relocating to the Fort Stewart area by June 1976, and an additional 105 DA civilian employees relocating by June 1977.

#### UTILITIES

#### REMARKS

#### Electric Power:

Electric power supplied by Georgia Power Co., on a scheduled, sliding rate contract.

Existing substation on post has capacity of 13,000 KVA. A load of 12,000 KVA was recorded at times of peak demand during the 1975 summer season.

The existing switching station and distribution circuits can accommodate approximately 20,000 KVA.

The existing substation's capacity is being "beefed up" on an interim basis through adding transformers to accommodate a power demand up to 19,000 KVA.

Meantime, a new substation will gradually take some of the load over a two-year period until it is completed in 1978, when it will have a capacity of 30,000 KVA. By 1980 another 30,000 KVA capacity substation will be added for a total of 60,000 KVA.

The ultimate demand which will be imposed by existing loads and that which will be added by medium and longrange MCA Programs is estimated at approximately 65,000 KVA.

#### Natural Gas:

Natural gas supplied by Atlanta Gas and Light Co., which guarantees a daily supply of 300 MCF (300,000 cubic feet), even in periods of curtailment. Curtailments have been applied on about 25 days a year.

When natural gas is curtailed, the deficiency is met by propane air, generated by a plant on post with a capacity of 37.5 MCF/hr. (Equivalent to 52.5 MCF/hr of natural gas, because the propane air produces 40% more BTUs per unit).

Present consumption of gas is about 2.000,000 therms

Present consumption of gas is about 2,000,000 therms (10 therms = 1 MCF) annually, or an average of 23 MCF/hr. Peak usage days occur in the winter, about 800 MCF/day.

#### Water Supply:

Water source is four deep wells, and one existing elevated storage tank (300,000 gallons). There is a pipeline between Wells No. 1 and 2.

Total capacity is 5,590 gallons per minute, and current load about 4,550 gallons per minute.

During 1975 monthly consumption of water averaged from 30,000,000 gallons in winter to 50,000,000 gallons in summer.

#### Sewerage:

The post has its own system, with a low rating trickling filter type plant with recirculation. Secondary treatment at present.

Capacity is 4,000,000 gallons per day. Normal current load is 2,000,000 gallons of effluent per day, with up to 4,000,000 gallons on occasions when heavy rains may result in infiltration.

#### Communications:

Two telephone systems on post: official (Class A) and unofficial (Class B).

Automatic dial exchange with In/Out dial local to Hinesville,  $\mathsf{GA}$ .

AUTOVON with 19 access lines to switching center at Ellisville, FL.

3,000 lines presently available for official tele-

phones, and 1,800 of these in use as of 6/76.

1,000 Class B lines provided by Coastal Utilities
Co. for family housing on post.

The 750 family housing units to be ready by January 1978 will be heated by gas and also have gas ranges. They will have a total estimated requirement of 15 MCF/hr as an annual average.

Chlorination treatment of the water takes place at the well itself, and the chloride content is 45 ppm. Fluoride levels are regarded as satisfactory by medical and dental authorities. Water softening procedures are applied only for the laundry and the utility boiler. Water pressure is 60 psi on base in pipes.

A 500,000 gallon storage tank is presently under construction. Another 500,000 gallon tank is to be ordered this year, and a third 500,000 gallon tank is programmed for FY 78.

Present system considered adequate for personnel strengths up to 45,000.

Upgrading of treating capability needed to meet EPA regulations by July 1, 1977.

A 201W study contracted to investigate possibility of a joint sewerage system and treatment plant with city of Hinesville. Construction of filter plant included in FY 77 Military Construction Army (MCA) Program.

Estimated 1,150 additional Class B lines required for family housing by January 1978, and 400 more by January 1979.

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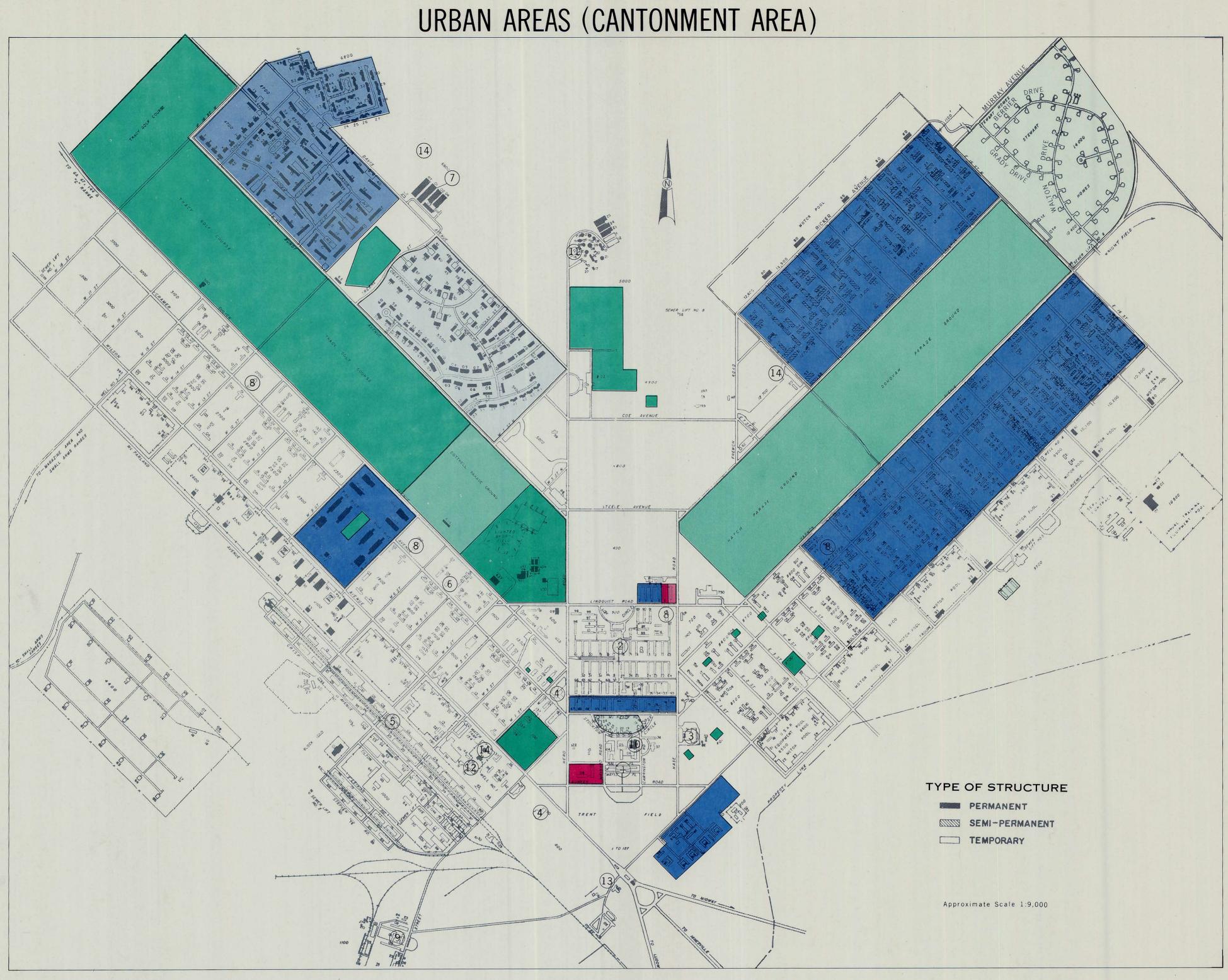
#### SCHOOLS AND MEDICAL FACILITIES

TYPE	CAPACITY	REMARKS
Schools: Elementary (with kindergarten)	24 rooms - elementary (capacity: 675) 5 rooms - mentally retarded 2 rooms - kindergarten (capacity: 100)	Estimated reaching of capacity by September 1977. If new facilities not constructed, the number of elementary school children going to off-post schools will range from about 600 in September 1975 to about 1,700 in January 1979. At the same time, about 1,000 middle school children and 960 high school children will attend off-post schools.
Medical Facilities: General Hospital	75 bed	A "T-type" wood frame complex of structures built in 1941. Can be expanded if required, but no current plans for expansion. General condition of building is fair, equipment is modern. January 1976 projected medical personnel strength: 29 doctors, 5 veterinarians, 20 nurses, 18 Medical Service Corps, 1 dietician, 1 physical therapist, 180 technicians, and 52 support.
Dental Clinics (3)	40 chairs	Heliport pad is available within one block of hospital.  January 1976 projected total: 15 dentists. A new dental clinic with a 27-chair capacity is in the FY 77  MCA Program.

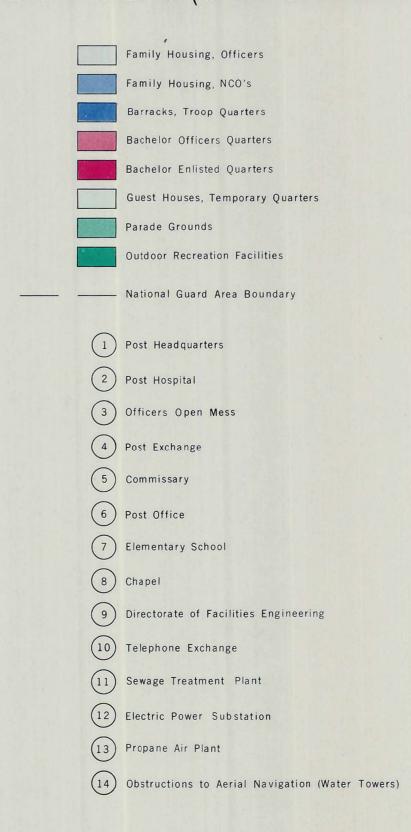
#### RECREATION FACILITIES

ТҮРЕ	NUMBER (7-14-75)	NUMBER (1-1-76)	(7-1-76)(	PROJECTED (1-1-77)(7-1-	7)	REMARKS
Libraries	1	1				w library will replace current
Theatres	1		1		Pr	resent theatre will become the ittle theatre.
Football Fields	2					
Softball Fields	3	4	1			
Volleyball Courts	5		3			
Handball Courts	1	3				
Tennis Courts	6	2	4			
Gymnasiums	J			1		
Swimming Pools	2			1		
Bowling Alleys	1	•	1			
Skeet Trap				1		
Auto Shop	1					Office
Outdoor Recreation Area	1			1		he Post Recreation Service Office
Recreation Center (Service Club)	1					lso operated a facility where milary personnel may rent boats, can
Crafts Shop	1				o	es, and all types of camping,
Teen Club	1				s	ports and recreational gear. Ex-
Golf Course (18-hole)	1			_		ellent hunting and fishing are a-
Travel Camp				1	a m t	Tailable on the reservation. Tour are organized and conducted for military personnel to places of interest and to outside recreational areas and sporting events.

FORT STEWART, GEORGIA
URBAN AREAS (CANTONMENT AREA)



# URBAN AREAS (CANTONMENT AREA)



## L. Non-Urban Culture Features

MAP NO.	GRID REFERENCE	DESCRIPTION	MAP NO.	GRID REFERENCE	DESCRIPTION
1	236515	Cartwright Stagefield, full echelon type Z, includes	49	186319	Zion Travel Cemetery
		4 paved runways, 15.24 m x 304.8 m (50 ft x 1000 ft)	50	231318	Borrow pit
2	238514	Metal shed; height, 3.66 m (12 ft), length, 10.67 m	51	229304	Poplar Head Cemetery
		(35 ft); width, 9.14 m (30 ft)	52	249299	Borrow pit
3	233501	Borrow pit	53	267309	Borrow pit
4 5	298502 234488	Moody Cemetery  Borrow pit	54	283300	Borrow pit
6	256495	Observation Tower, height, 11.3 m (37 ft)	55	280285	Pinholster Cemetery
7	261490	Revetment, length, 262.13 m (860 ft), height, 3.05 m	56	308509	Jerusalem Cemetery
		(10 ft)	57	379516	Observation Tower, height, 30.5 m (100 ft)
9	230487	Camp Oliver Stagefield, tactical bivouac site, includes 7 latrines, 9 mess halls, tent pads (1000 men), weather station, deep well with 12,000 gallon storage capacity and a helipad 19.81 m x 1219.2 m (65 ft x 4,000 ft) fixed wing airstrip  Tower (forestry), height, 27.43 m (90 ft)	58	379515	TAC-X, tactical bivouac site; includes one judo pit, two 80 man semi-permanent barracks, eight 20 man temporary barracks, one 400 man mess hall, one communication building, 64 tent pads, deep well with 5,000 gallon storage capacity and landing zone approximately 457.2 m x 609.6 m (1,500 ft x 2,000 ft) with 60 helicopter parking pads
10	226484	Air Control Tower, height, 10.06 m (33 ft)	59	382512	Observation Tower; height, 30.5 m (100 ft)
11	228473	Revetment, protects moving target track at St. Lo	60	387505	Borrow pit
		Range, length, 316.99 m (1,040 ft); height, 6.1 m (20 ft)	61	306499	Borrow pit
12	235471	Borrow pit	62	311491	Salem Cemetery
13	238475	Borrow pit	63	389495	Borrow pit
14	221452	Revetment at Brest Range, length, 359.66 m (1,180	64	378461	Borrow pit
		ft); height, 3 05 m (10 ft)	65	369455	Warnell Cemetery
15	218439	Revetment at Kasserine Range, length, 396.24 m (1,300 ft), height, 3.05 m (10 ft)	66	371453	Building, 5.5 m x 3.7 m (18 ft x 12 ft), height, 4.5 m
16	284439	Borrow pit		373455	(15 ft) Building
17	288441	Haygrove Cemetery	67	347433	Borrow pit
18	209421	Borrow pit	68	354440	Borrow pit
19	230422	Metz Moving Target Range; 5.63 km (3.5 mi) standard	69	369439	Borrow pit
		gage track in figure 8 configuration, revetments	70	372445	Observation Tower, height, 6.1 m (20 ft)
		protect track. Revetments range from 3.05 m to 3.66 m (10 ft to 12 ft) in northwest portion of range to 6.1 m (20 ft) in the southeast	71	378444	Revetment, length, 225.6 m (740 ft), height, 3.7 m to 4.6 m (12 ft to 15 ft)
20	235427	Sand Hill Cemetery	72	380446	Borrow pit
21	209412	Metz Airstrip, abandoned	73	379439	Borrow pit
22	276392	Borrow pit	74	367433	Observation Tower, height, 6.1 m (20 ft)
23	270383	Bethel Cemetery	75	369433 369434	Borrow pit Borrow pit
24	249374	Moody Cemetery	76	377432	Borrow pit
25	260383	Tank Crew Proficiency Course	77	382431	Revetment, length, 420.6 m (1,380 ft), height, 4.6 m
25A	265382	Observation Tower, height, 12.2 m (40 ft)			(15 ft)
25B 26	271379	Borrow pit	78	391429	Borrow pit
27	174361 175357	Borrow pit  Fero Stagefield, one-half echelon, paved parallel	79	399428	Reims Cemetery
	175507	runways, "Z" shaped, 15.24 m x 304.8 m (50 ft x	80	356427 368424	Borrow pit
		1000 ft)	81 82	384429	Borrow pit Borrow pit
28	173351	Borrow pit	83	312416	Borrow pit
29	176351	Borrow pit	84	368419	Borrow pit, also abandoned townsite of "Willie"
30	183345	Building, 18.3 m x 10.7 m (60 ft x 35 ft), height, 4.5 m (15 ft)	85	373416	Observation Tower, height, 6.1 m (20 ft)
31	184347	Building, 18.3 m x 10.7 m (60 ft x 35 ft), height,		373417	Observation Tower, height, 6.1 m (20 ft)
		4.5 m (15 ft)	0.6	374418	Observation Tower, height, 6.1 m (20 ft)
32	184344	Borrow pit	86 87	369412 380413	Borrow pit Strum Bay Cemetery
33	192340	Jaeck Stagefield, primary fixed wing, four parallel runways, 30.5 m x 609 6 m (100 ft x 2,000 ft), paved	88	375408	Observation Tower; height, 6.1 m (20 ft)
34	196341	Control Tower, height, 19.8 m (65 ft)	89	374408	Borrow pit
35	199336	Oakgrove Cemetery		379410	Borrow pit
36	201334	Smith's Chapel Cemetery	90	326402	Todd Ray Cemetery
37	209332	Gape of the Bays Cemetery	91	328395	Cemetery
38	237336	Borrow pit	92	354401	Borrow pit
39	240336	Borrow pit	93	374396	Borrow pit
40	254335	Borrow pit	94	387395 394396	Borrow pit  Moving Target Range, 4.83 km (3 mi) standard gage
41	267357	Borrow pit	95	394390	track, figure 8 configuration with revetment pro-
42	285343	Borrow pit			tecting track, height of revetment, 3.05 m to 3.66 m
43	285342	Tower, height, 36.3 m (119 ft)	22	202267	(10 ft to 12 ft)
44	293355	Borrow pit	96	303367	Revetment, length, 499.9 m (1,640 ft), height, 4.5 m (15 ft)
45 46	297352	Borrow pit	97	348370	Borrow pit
46 47	298352 295347	Cemetery Borrow pit	98	348371	Cemetery
47 47A	293347	Borrow pit	99	340364	Borrow pit
48	298333	Fuel point, Taylors Creek Maintenance Area and Gas	100	307348	Moving Target Range (abandoned), 4.83 km (3 mi)
		Facility, located southwest of Taylo's Creek DZ/			standard gage track, figure 8 configuration with revetment protecting track, height of revetment,
		Tactical Bivouac Site, includes one maintenance			1 8 to 2 4 m (6 ft to 8 ft)
		building, one 500 gallon and one 1,000 gallon pro-	101	373348	Goulden Cemetery
		pane gas tank, two 12,000 gallon POL tanks with nine			

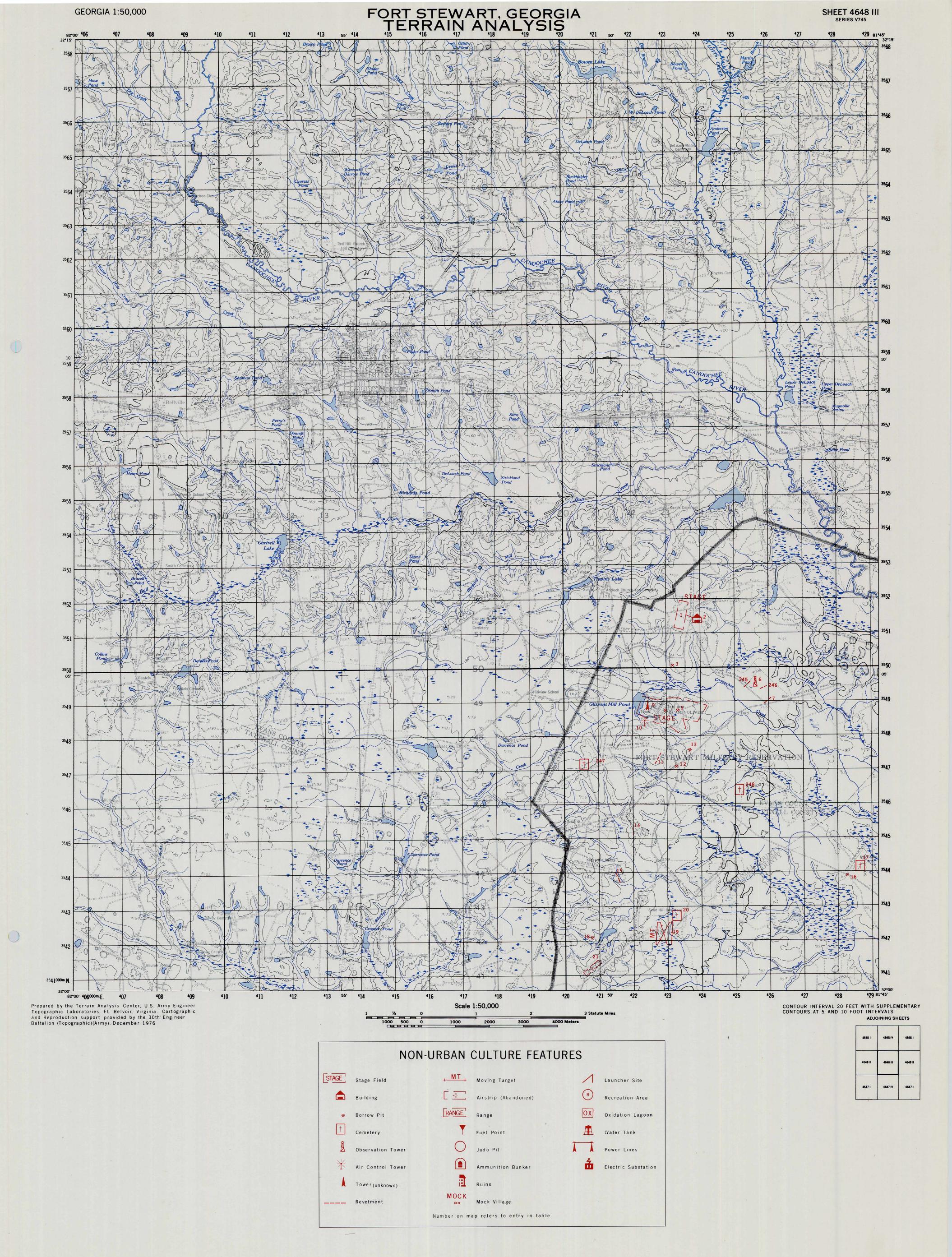
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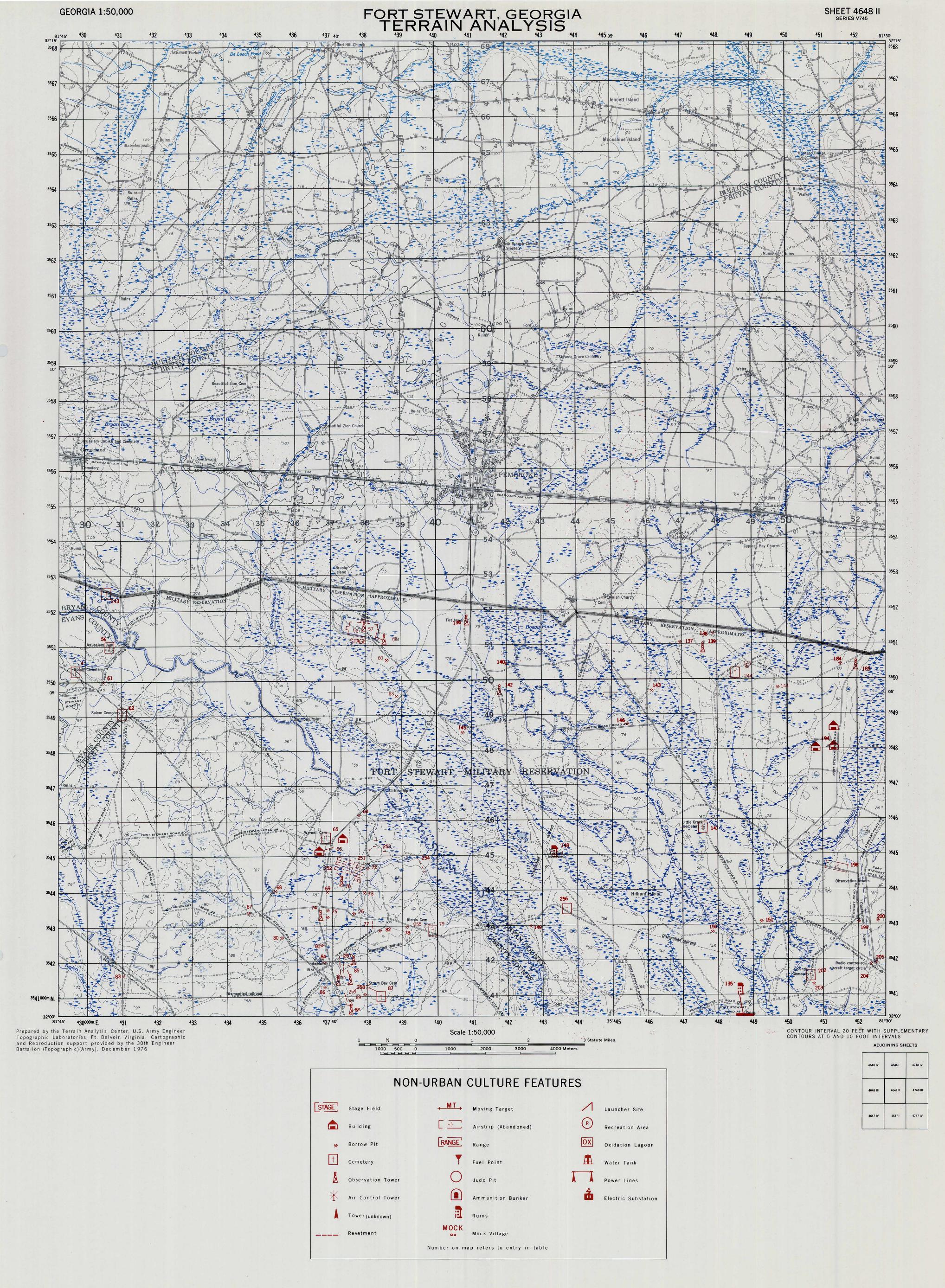
MAP NO.	GRID REFERENCE	DESCRIPTION		MAP NO.	GRID REFERENCE	DESCRIPTION
102	390346	Borrow pit	13	149	427430	Borrow pit
103	392347	Borrow pit		150	478428	Borrow pit
104	327345	Taylors Creek Tactical Bivouac Site, used primarily		151	493431	Borrow pit
		as a drop zone; includes 7-16 man temporary barrack,		152	423399	Thomas Hill Cemetery
		a 100 man temporary mess hall, an administration building, a latrine and an overhead fill stand deep		153	488404	Ruins
		well with 8,000 gallon storage capacity		154	439369	Tower; steel, 7.6 m (25 ft) high
105	303323	Borrow pit		155	468358	Tower; steel, 7.6 m (25 ft) high
106	316329	Borrow pit		156	407340	Borrow pit
107	346330	Revetment (2) (abandoned) at Taylors Creek Tank		157	404333	Borrow pit
	347332	Range; length, 274.3 m (900 ft) and 243.8 m (800 ft);		158	444327	Borrow pit
108	354329	height, 3.05 m to 4.5 m (10 ft to 15 ft); eroded		159	462327	Borrow pit
109	362314	Borrow pit Borrow pit		160	468329	Mock Village
110	366320	Revetment; moving tank range; abandoned target berm;		161	491 328	Borrow pit
	55525	eroded; length, 316.9 m (1,040 ft); height, 2.4 m to		162	492327	Cypress Slash Cemetery
		3.05 m (8 ft to 10 ft)		163	497332	Borrow pit
111	368327	Revetment; moving tank range; abandoned target berm;		164	455316	Train Fire Range
		eroded; length, 213.4 m (700 ft); height, 2.4 m to 3.05 m (8 ft to 10 ft)			456317 461321	Train Fire Range
112	385335	Borrow pit		165	461320	Train Fire Range Observation Tower; 4.5 m (15 ft) high
	387336	Borrow pit		166	466318	Burton Airstrip (abandoned); 415.5 m x 30.5 m
113	388333	Taylors Creek Cemetery				(1,363 ft x 100 ft), grass surface
114	386331	Borrow pit		167	485315	Borrow pit
115	373298	Observation Tower; height, 10.5 m (34 ft)		168	434299	Target Launching Site
116	372298	Revetment (abandoned); eroded; length, 323.1 m		169	449310	Observation Tower; 4.5 m (15 ft) high
117	202020	(1,060 ft); height, 1.5 m (5 ft)		170	472306	Building; 22.9 m x 10.7 m (75 ft x 35 ft)
117 118	383292	Borrow pit		171	434299	Antiaircraft Range
119	392295 392281	Borrow pit		172	444293	Revetment; length, 201.2 m (660 ft); height, 1.2 m
120	398281	Borrow pit Borrow pit		172	425205	(4 ft)
121	315269	Borrow pit		173	435285	Borrow pit
122	318270	Revetment; close combat course; borders north and		174 175	464285	Borrow pit
	0.0270	west sides; length on north, 91.4 m (300 ft), on		176	407277 438278	Borrow pit Borrow pit
		west, 353.6 m (1,160 ft); height, 3.05 m (10 ft)		177	467273	Recreation Area; tennis court
123	382279 384278	Borrow pit		178	468274	Recreation Area; Weaver Swimming Pool
124	398276	Borrow pit  Judo pit; sawdust bottom; sandbagged perimeter;		179	469269	Oxidation Lagoon
164	330270	Ranger Physical Training Facility		180	421260	Recreation Area; lighted sports field
125	344258	Borrow pit		181	415249	Fuel Point; coal yard
126	355259	Borrow pit		182	413242	Zoucks Cemetery
127	371257	Roadstrip No. 6 (abandoned airstrip); unpaved (dirt)		183	418247	Fuel Point; oil yard; one tank served by fuel track
		in usable condition		184	515504	Borrow pit
128	393254 400261	Small Arms Ranges; target berms at northwest ends are 3.05 m (10 ft) high		185	519505	Observation Tower; Aerial Gunnery Range No. 3;
	401264	are 5.05 iii (10 70) iiigii				height, 7.6 m (25 ft). Searchlight berm (height, 6.1 m (20 ft)) immediately adjacent
129	401256	Observation Tower; 21.9 m (70 ft) high		186	543506	Borrow pit
130	397254	Observation Tower; 6.1 m (20 ft) high		187	568503	Observation Tower on Aerial Gunnery Range No. 4;
131	401253	Ammo Storage Bunkers; rail served; bunkers trending north-south, 30.48 m x 12.2 m (100 ft x 40 ft); east-			••••	height, 7.6 m (25 ft). Searchlight berm, 6.1 m (20 ft) high, immediately adjacent
		west, 24.4 m x 15.2 m (80 ft x 50 ft); height, 4.5 m (15 ft)		188	512339	Electric Substation; Georgia Power Company, 1600 KVA,
132	390251	Observation Tower; 6.1 m (20 ft) high				44 KV/12.47 KV
133	395249	Borrow pit		189	574498	Borrow pit
134	395245	Building; 22.9 m x 18.3 m (75 ft x 60 ft)		190	561491	Cox Cemetery
	395247	Building; 15.2 m x 12.2 m (50 ft x 40 ft); ammunition		191	582494	Borrow pit
		storage building with steel roof; U-shaped earthen revetment		. 192	595496 596499	Borrow pit Borrow pit
135	402249	Observation Tower; 21.9 m (70 ft) high		193	599508	Borrow pit
136	409517	Observation Tower; 27.4 m (90 ft) high		194	508481	Building (3); 7.6 m x 7.6 m (25 ft x 25 ft); height,
137	469510	Borrow pit			513481	3.7 m (12 ft)
138	479513	Borrow pit		14-	513487	
139	476509	Observation Tower; Aerial Gunnery Range No. 2;		195	570474	Liberty Chapel Cemetery
		height, 7.6 m (25 ft). Searchlight berm (height,		196	578469	Ruins
		6.1 m (20 ft)) immediately adjacent		197	598462	Waters Cemetery
140	420503	Borrow pit		198	513446	Roadstrip No. 4 (abandoned airstrip); 1,723.4 m x 15.2 m (5,654 ft x 50 ft), dirt surface, usable
141	489503	Borrow pit				condition
142	418498	Observation Tower on Aerial Gunnery Range No. 1; height, 7.6 m (25 ft). Searchlight berm; 6.1 m		199	520431	Borrow pit
		(20 ft) high, immediately adjacent		200	525431	Borrow pit
143	461496	Borrow pit		201	564433	Borrow pit
144	497498	Borrow pit		202	507416	Corinth Cemetery
145	408485	Borrow pit		203	507413	Borrow pit
146	454487	Borrow pit		204	523418	Target Launching Site
147	476457	Little Creek Cemetery		205	523419 <b>525419</b>	Borrow pit Borrow pit
148	434451	Ruins; abandoned townsite of "Letford"		206	530415	Borrow pit
					•	•

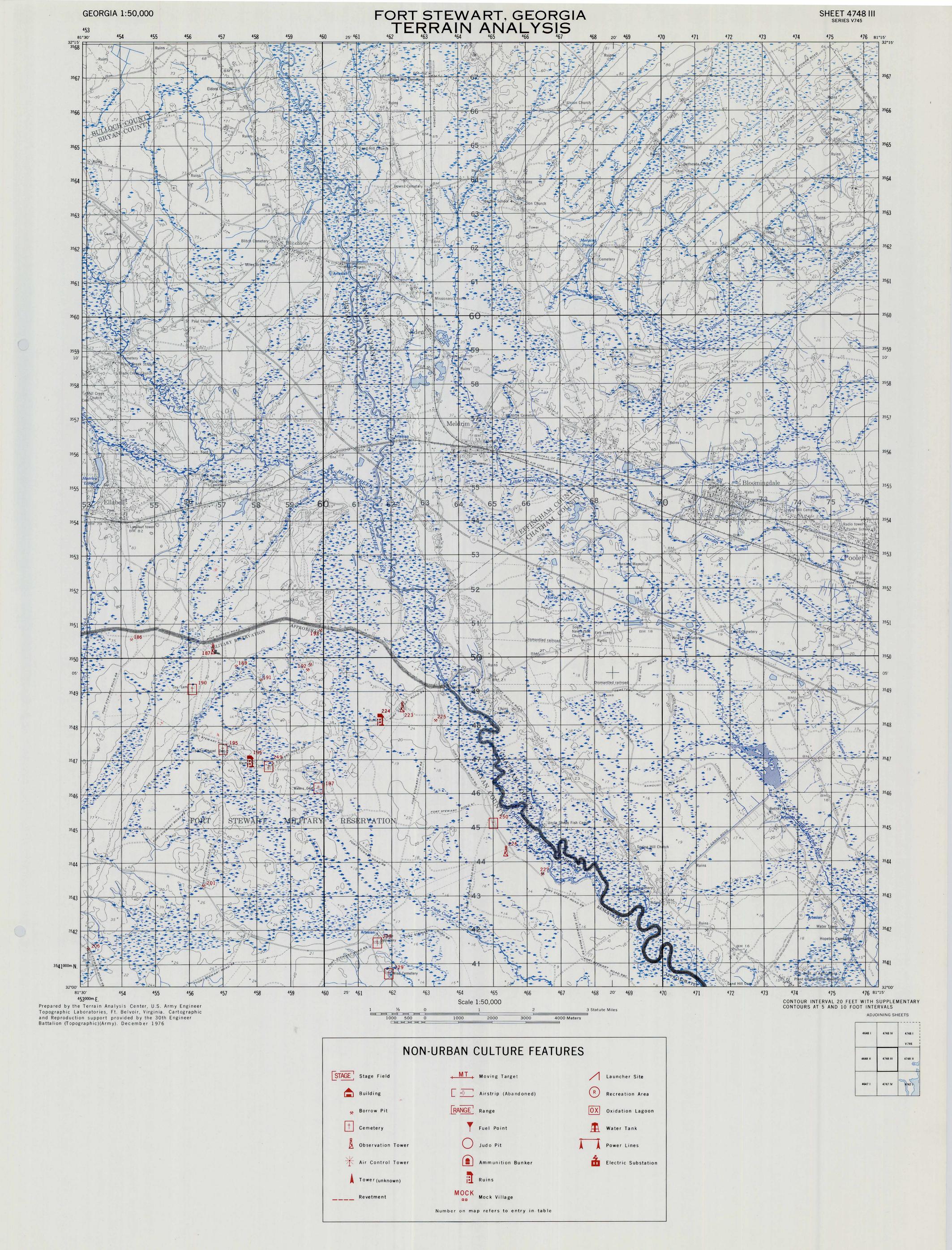
## L. Non-Urban Culture Features

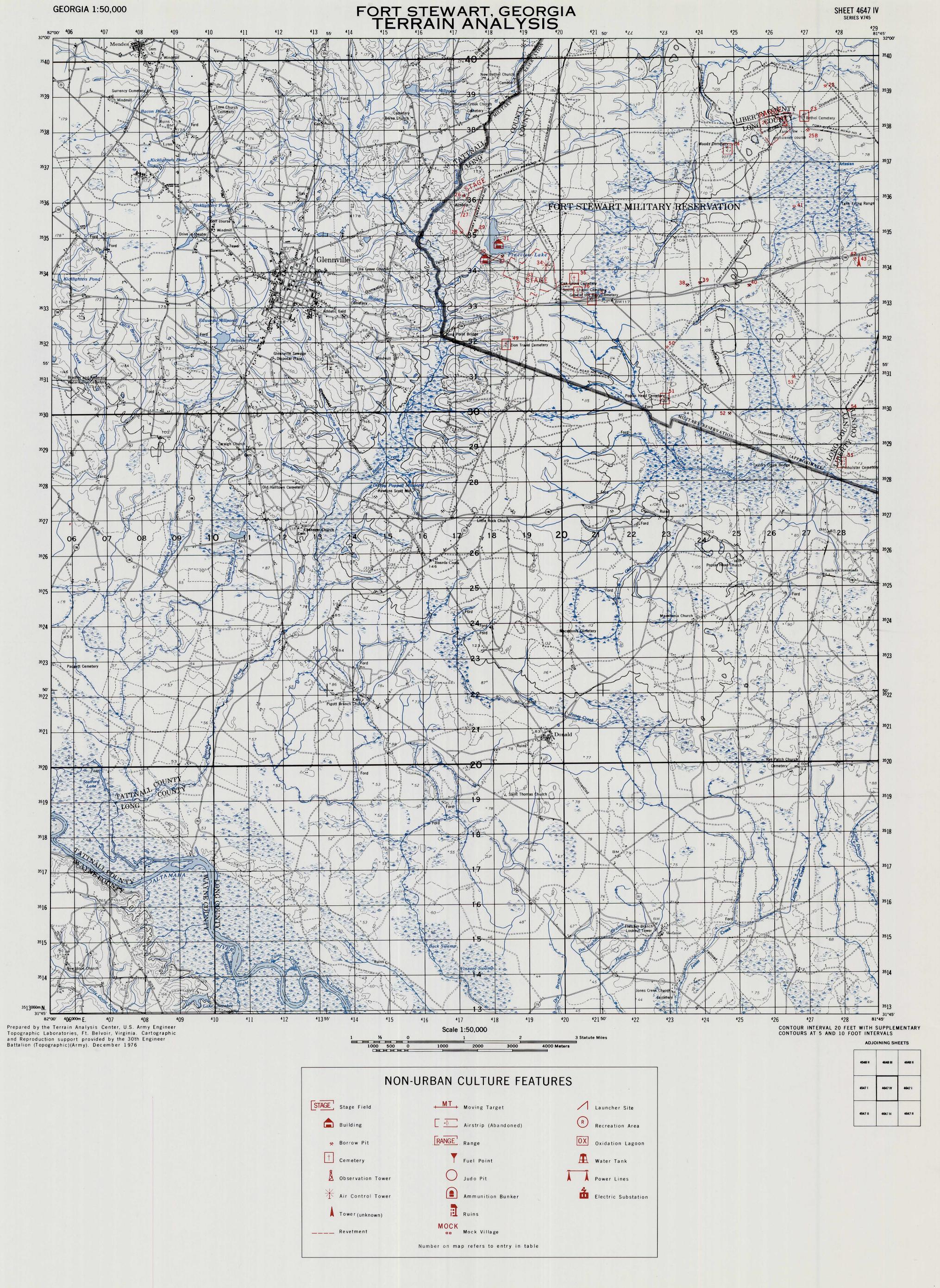
MAP NO.	GRID REFERENCE	DESCRIPTION	MAP NO.	GRID REFERENCE	DESCRIPTION
207	505401	Borrow pit	240	638355	Todds Cemetery
208	545388	Green Bay Cemetery	241	644357	RW Stagefield No. 1 (DUC HOA); Helipad, paved and sod, 4 launching lanes and 120 parking spaces
209	561385	Observation Tower on Aerial Gunnery Range No. 7; height, 7.6 m (25 ft). Searchlight berm, 6.1 m (20 ft) high, immediately adjacent	242	458266 to 512339	Powerline; Georgia Power Company; 44 KV; 18.3 m to 21.3 m (60 ft to 70 ft) wooden poles. Only powerlines with poles or towers over 12.2 m (40 ft) have been
210	575387	Borrow pit		<b>3.253</b>	shown on map
211	513377	Borrow pit	243	307525	Boggs Cemetery
212	516379	Building; 41.2 m x 12.2 m (135 ft x 40 ft)	244	486502	Downs Cemetery
213	560372	Irene Driggs Cemetery	245	256495	Revetment; elevated tank table, 100 m x 400 m (328
214	564383	Target Launching Site			ft x 1,312 ft); height, 1.2 m (4 ft)
215	552366	Artillery Range Firing Lane (abandoned)	246	260493	Revetment (2); target mounds 3.7 m to 4.5 m (12 ft
216	558366	Borrow pit		000470	to 15 ft) high
017	559368	Borrow pit	247	208472	Herrin Cemetery
217	527349	Borrow pit	248	253464	Glisson Pond Cemetery
218	587351	Borrow pit	249	584469	Strickland Cemetery (north)
219	513338	Fuel Point; two storage tanks, diameter, 6.1 m (20 ft); height, 6.1 m (20 ft)	250	650452	Bandy Cemetery
220	522339	Air Control Tower; height, 18.3 m (60 ft)	251	376447	Revetment; length, 292.6 m (960 ft); height, 3.7 m (12 ft)
221	523338	Water Tank; height, 60.96 m (200 ft); 150,000 gallon storage capacity	252	375447	Revetment; elevated range lanes; length, 378 m (1,240 ft); height, 1.8 m (6 ft)
222	527318	Borrow pit	253	383452	Revetment; numerous tank firing positions with
223	623485	Observation Tower on Aerial Gunnery Range No. 5; height, 7.6 m (25 ft). Searchlight berm, 6.1 m (20 ft) high, immediately adjacent	254	395447	heights, 3.7 m to 4.5 m (12 ft to 15 ft)  Moving Target Track; protective revetments, 3.05 m to 3.7 m (10 ft to 12 ft) high
224	617482	Ruins	255	397430	Revetment; protecting cemetery; 6.1 m (20 ft) high
225	632482	Borrow pit	256	438435	Letford Cemetery
226	653443	Observation Tower on Aerial Gunnery Range No. 6; height, 7.6 m (25 ft). Searchlight berm, 6.1 m (20 ft) high, immediately adjacent	257	373419	Revetment (2); length, 585.2 m (1,920 ft) and height, 3.7 m (12 ft); length, 542.5 m (1,780 ft) and height, 3.05 m (10 ft)
227	664437	Borrow pit	258	380413	Revetment; protecting cemetery; 6.1 m (20 ft) high
228	615416	Clyde Cemetery	259	374410	Revetment; elevated firing table; length, 268.2 m
229	619408	Wise Cemetery			(880 ft); height, 2.4 m (8 ft)
230	629375	Briggs Cemetery	260	383355	Goulden Family Cemetery
231	633373	Borrow pit	261	424359	Wells Cemetery
232	638377	Borrow pit	262	505372	Strickland Cemetery (south)
233	639378	Observation Tower; 27.4 m (90 ft) high	263	369328	African Methodist Cemetery
234	641379	Dreggars Cemetery	264	475326	Trinity Cemetery
235	641378	Bragg Cemetery	265	490325	Cemetery
236	656370	Borrow pit	266	484310	Cemetery No. 47
237	668373	Borrow pit	267	319287	Goulden Family Cemetery
	668375	Borrow pit	268	398280	Cemetery
238 239	664366 610365	Borrow pit Staging Area	269	460286	Rahn Cemetery

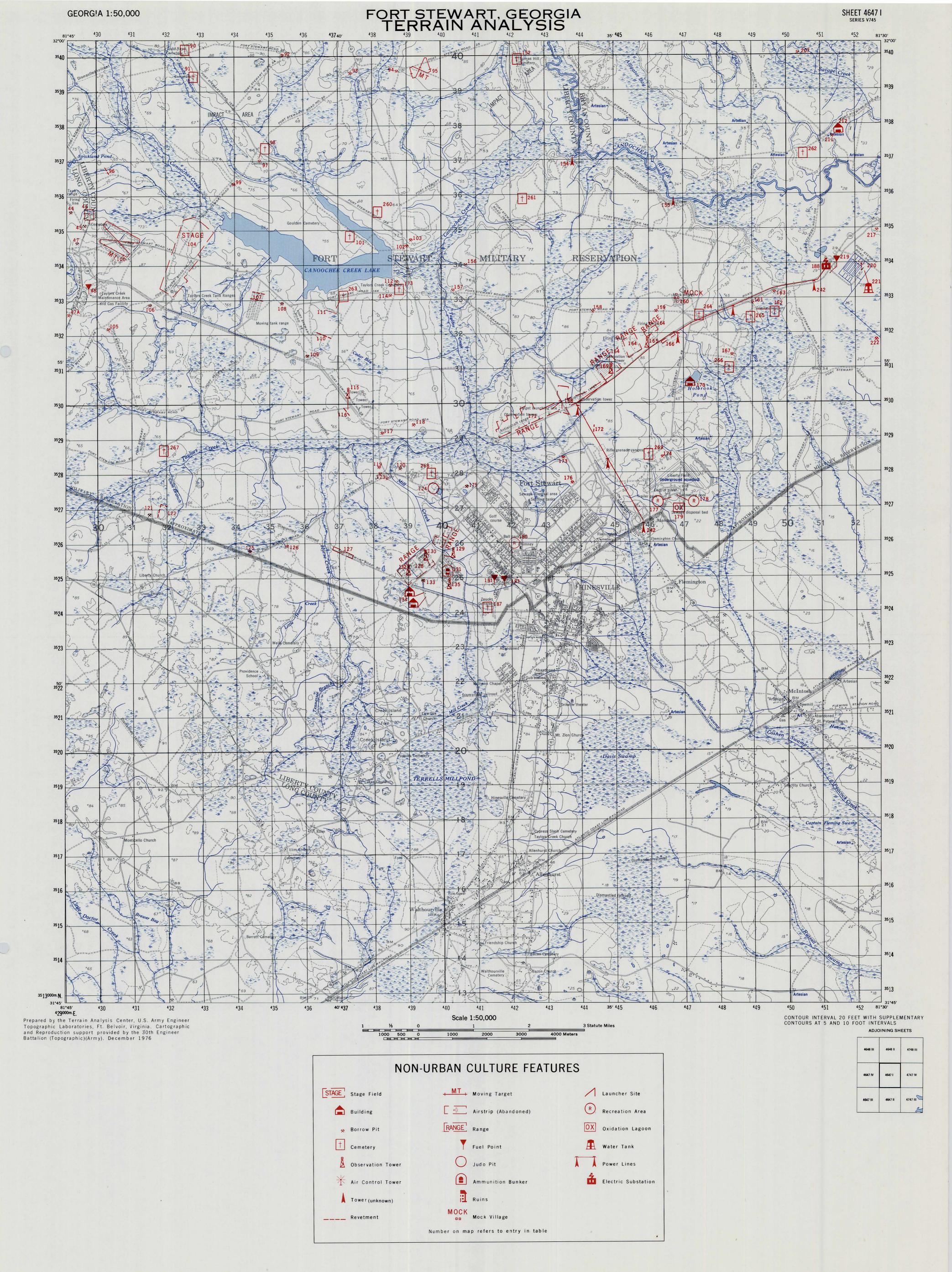
NOTE: All measurements are approximate.

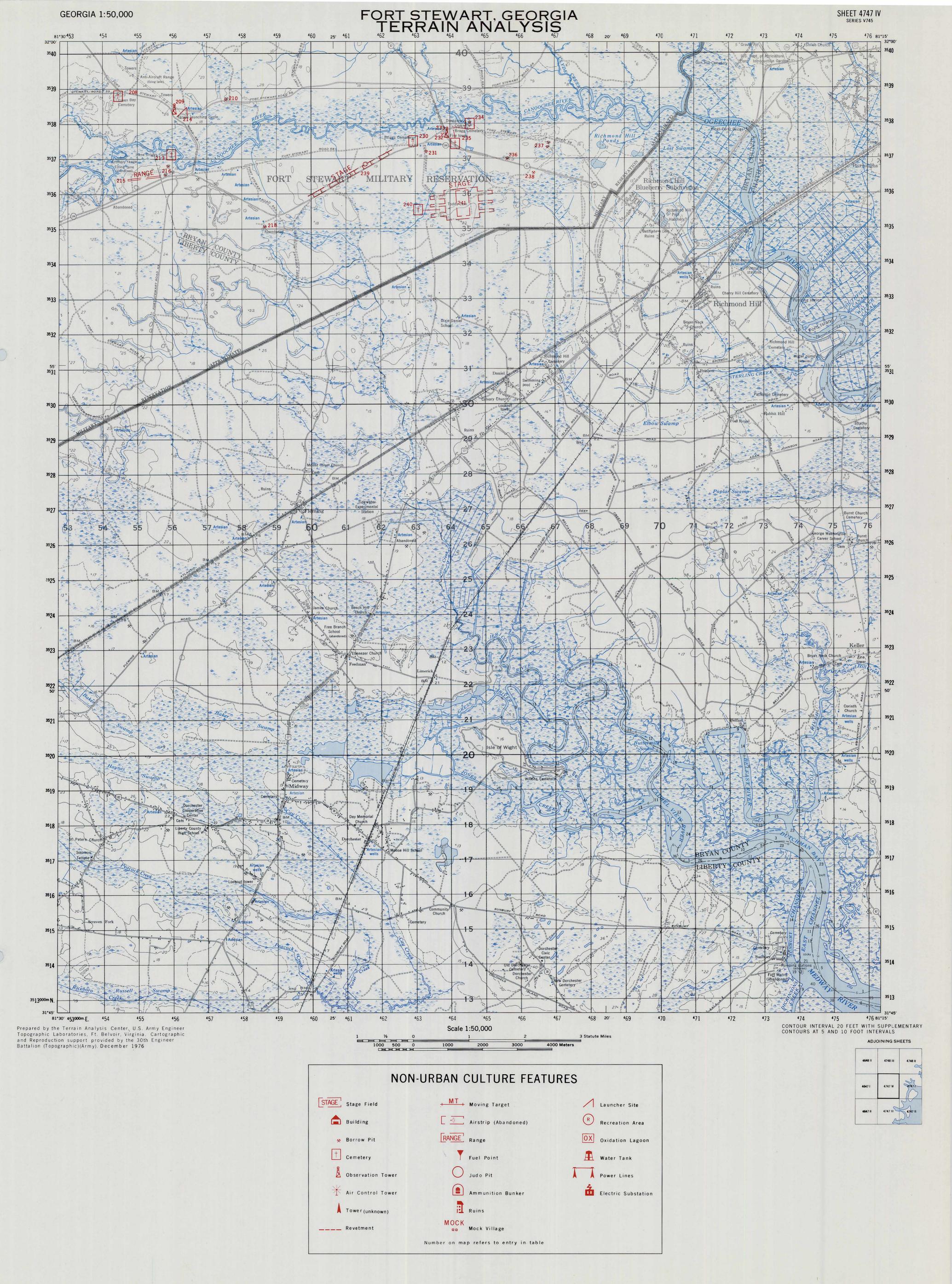












# III. OFF-POST FEATURES

## A. Airfields

Hunter Army Airfield is the only airfield within a 50 mile radius of the Fort Stewart reservation that meets the requirements to accept a C-130A or larger troop transport; the C-130A has a maximum gross weight of 124,000 pounds.

					<u> </u>		
NAME; LOCATION; TYPE; AND CLASSIFICATION	ELEVATION AND STATUS	RUNWAY DESCRIPTION	TAXIWAY, PARKING, APRON, AND HARDSTAND AREA DESCRIPTION	BUILDING DESCRIPTION	POL FACILITIES	NAVIGATIONAL AIDS	REMARKS
1. Hunter Army Airfield; 32 <sup>0</sup> 01'N; 81 <sup>0</sup> 08'W; A military airfield	12.8 m (42 ft) above sea level; operational	Longest runway: 3,475 m long; 61 m wide; (11,400 ft long; 200 ft wide); azimuth, 90°-270°; maximum weight bearing capacity S93, T300, ST175, TT400; asphalt surface in good condition	Three taxiways: 46 x 366 m (150 x 1,200 ft); 30 x 518 m (100 x 1,700 ft); 30 x 3,094 m (100 x 10,150 ft); maximum weight bearing capacity and surfaces same as longest runway; parking, apron and hard-stand areas approximately 1,244,860 m <sup>2</sup> (13,400,000 ft <sup>2</sup> )	Two hangars, both 91.4 x 106.7 m (300 x 350 ft)	US Aviation fuel (MIL-SPECS) with grades of 115/145, JP-4; US Aviation Oil (MIL~SPECS) 1100 reciprocating engine oil (MIL-L-6082)	Control tower: 30 m (97 ft) high; Flight Service Station Savannah; ground control ra- dar information approach sys- tem; omni-directional range (VOR-VHF) monitored only dur- ing airfield operational hours; instrument landing system; precision approach radar; airport surveillance radar. Lighting*: rotating beacon; high intensity runway lights; high intensity approach lights; sequenced flashing lights; visual approach slope indicator systems; runway end identifier lights *Runway 9 only	Aerodrome is only partially covered by the USAF. NOTAM System and maintains a military NOTAM file. (For complete aerodrome information, civil NOTAMs must also be consulted)

NOTE: Runway weight bearing capacity (gross weight of aircraft) is determined by adding 000 to figure following S, T, ST, TT, TDT. Runway weight bearing capacity given is for unlimited operations. Aircraft weight higher than given requires prior permission from aerodrome controlling authority.

- S Runway weight bearing capacity for aircraft with single-wheel type landing gear (C-47, F100).
- T Runway weight bearing capacity for aircraft with twin-wheel type landing gear (C-9A).
- ST Runway weight bearing capacity for aircraft with single-tandem landing gear (C-130).
- TT Runway weight bearing capacity for aircraft with twin-tandem type (includes quadricycle) landing gear (B-52, C-135).
- TDT Runway weight bearing capacity for aircraft with twin-delta tandem landing gear (C-5).

For further information, see DOD Flight Information Publication, (enroute IFR-Supplement United States).

## B. Urban Areas

There are 15 urban areas with populations greater than 2,500 within a radius of 50 miles of the reservation. These urban areas are all in Georgia and range in size from 2,660 to 118,349 persons. Although the latest data characteristics of each town were sought by visits, letter or telephone, not all data were acquired in time for publication.

NAME AND LOCATION	POPULATION	HOUSING AVAILABILITY	EDUCATION FACILITIES	RECREATION FACILITIES	UTILITIES AND MEDICAL FACILITIES	REMARKS
Baxley, GA 1 <sup>0</sup> 47'N; 2 <sup>0</sup> 20'W	3,503	Number of houses: 1,215.  Number of rental houses: 1,303; average monthly rent, \$41; average percent vacant, 1%.  Number of new houses per year: 6-8.  Number of apartments: 30; average percent vacant, 1%.  (1970 data)	4 Elementary schools: grades 1-8, enrollment 349; grades 1-8, enrollment 349; grades 1-8, enrollment 216.  1 Junior High school: grades 5-8, enrollment 905.  1 High school: grades 9-12, enrollment 1,206.  (1975 data)	2 Lighted softball fields. 1 Lighted little league field. 1 Lighted baseball field. 2 Swimming pools. Basketball goals. Picnic tables and picnic areas. Additions being made to the park; 3 tennis courts, playground equipment, parking areas and a little league field. (1975 data)	Water: Source, 3 deep wells; capacity, 1.5 mgd; present load, 0.4 mgd. All wells are chlorinated. Sewerage: Two pumping stations and a trickling filter treatment facility; capacity, 1.5 mgd. Areas of the city are still not served due to the need for additional pumping stations; a planned sewerage treatment plant would solve this problem. Gas: Georgia National Gas Company. Electricity: Georgia Power Company. The Company is constructing a nuclear power electric generating plant on a 2,000 acre site, ten miles north of Baxley. The first unit is producing 800,000 KV, while a second unit should start operation in 1977. Medical Facilities: 1 hospital (40 beds); occupancy rate 62%.	
2 Brunswick, GA 31 <sup>0</sup> 11'N; 81 <sup>0</sup> 30'W	19,585 (1974)	Number of houses: 6,655.  Renter occupied: 3,012;  number for rent: 293.  Number for sale: 57.  Vacant year round: 446.  (1970 data)	No data.	No data	(1975 data) No data	
3 Claxton, GA 32 <sup>0</sup> 10'N; 81 <sup>0</sup> 55'W	2,669 (1974)	Number of houses: 986.  Number of rental houses: 421; average monthly rent, \$125; average percent vacant, 2%.  Number new houses per year: 15; average number of sales per year, 5; average sale price, \$25,000.  Number of apartments: 217; average rent, \$150; average percent vacant, 2%.  (1975 data)	1 Elementary school: grades K-5, enrollment 744 (1995 enrollment projection 832). 1 Junior High school: grades 6-8, enrollment 499 (1995 enrollment projection 542). 1 High school: grades 9-12, enrollment 587 (1995 enrollment projection 689). (1975 data)	2 Playgrounds. 1 Private golf course. 2 Picnic areas. 1 Indoor facility. (1975 data)	Water: Source, 3 wells; capacity, 2.52 mgd.  Sewerage: Capacity 0.5 mgd; load, 0.2 mgd. System is being remodeled and expanded.  Gas: Southern Natural Gas Company.  Electricity: Georgia Power Company.  Capacity 6,250 KV.  Medical Facilities: 1 hospital (73 beds), 1 nursing home (87 beds), 1 health department.  (1975 data)	
Garden City, GA 2 <sup>0</sup> 07'N; 31 <sup>0</sup> 08'W	5,790 (1974)	Number of houses: 1,700.  Average sale price, \$30,000.  Number of apartments; 400;  average rent, \$85.	Chatham County operates and main- tains a total of 55 regular public schools, which includes 39 elemen- tary schools, 8 junior high schools and 8 high schools. (1974-1975 data)	No data	Water: Source, 3 wells; capacity, 1,800 gpm.  Sewerage: No data.  Gas: Savannah Gas Company and Southern  Natural Gas Company.  Electricity: Savannah Electric and  Power Company.  Medical Facilities: No data.  (1975 data)	
Glennville, GA	2,965 (1974)	Number of houses: 1,073. Renter occupied: 451; number for rent, 20; median rent, \$40. Average number for sale: 1. Vacant year round, 43.  (1970 data)	2 Elementary schools: grades 1-6, enrollment 552; grades 1-4, enrollment 434.  1 Middle school: grades 5-8, enrollment 556.  1 Junior High school: enrollment 544.  2 High schools: grades 8-12, enrollment 747; grades 9-12, enrollment 517.  (1975 data)	The Kicklighter Playland (private club) offers ten- nis, golf and swimming. Hunting and fishing area of 8,000 acres near Glennville. (1975 data)	Water: Source, 2 wells; capacity, 1.62 mgd; load, 0.31 mgd. Water is chorinated at the wells.  Sewerage: Trickling filter for secondary treatment; capacity, 0.40 mgd. It has been recommended that the system be expanded and improved to accommodate a design flow rate of 0.8 mgd.  Gas: Natural Gas and Southern Natural Gas Company.  Electricity: Canoochee Electric Membership Corporation and Georgia Power Company.  Medical Facilities: No data.  (1975 data)	
6 Hinesville, GA 31 <sup>0</sup> 51'N; 81 <sup>0</sup> 25'W	4,115 (1974)	Number of houses: 1,330.  Renter occupied: 691;  number for rent, 51;  median rent, \$68.  Vacant year round: 76.  Number for sale: 11;  median price, \$23,800.  (1970 data)	3 Elementary schools: grades 1-3, enrollment 671; grades 4-6, enrollment 731; grades 1-6, enrollment 559.  1 Middle school: grades 7-8, enrollment 787.  1 High school: grades 9-12, enrollment 1,268.  (1974 data)	Tennis courts. Picnic areas. Swimming pool. 2 Athletic fields. 1 National Guard Armory. 1 Golf course. Fishing camps and lakes. (1975 data)	Water: Source, 3 wells; capacity, 2.88 mgd. Water is chlorinated before entering the distribution system.  Sewerage: The existing collection system in Hinesville requires five lift stations. The capacity is adequate to handle the present load.  Gas: Georgia Natural Gas.  Electricity: Georgia Power Company.  Medical Facilities: 1 hospital (50 beds); occupancy rate, 29%. 1 health department.  (1975 data)	
7 Jesup, GA 31 <sup>0</sup> 36'N; 81 <sup>0</sup> 53'W	9,091 (1974)	Number of houses: 3,480.  Number of rental houses, 515; average monthly rent, \$175; average percent vacant, 20%.  Number new houses per year: 50.  Number of apartments: 235; average rent, \$150; average percent vacant, 10%.  (1970 data)	5 Elementary schools: grades 1-7, enrollment 316; grades 1-7, enrollment 334; grades 1-5, enrollment 543; grades 1-5, enrollment 554.  1 Middle school: grades 6-7, enrollment 706.  1 Junior High school: grades 8-9, enrollment 923.  1 High school: grades 10-12, enrollment 1,153.  (1975 data)	4 Tennis courts. 2 Softball fields. 1 Nine hole private golf course. 2 Baseball fields. 1 Shooting preserve. 1 Community recreation center. (1975 data)	Water: Source, 5 wells; capacity, 5.2 mgd.  Sewerage: Capacity 2.1 mgd. Sewerage system consists of sludge and primary treatment plants.  Gas: Natural gas is available only in Jesup. Atlantic Gas Light Company.  Electricity: No data.  Medical Facilities: 1 hospital (138 beds); 2 nursing homes (114 beds). 1  County health department.  (1975 data)	Water storage does not appear adequate to meet the daily needs of the community.

NAME AND LOCATION	POPULATION	HOUSING AVAILABILITY	EDUCATION FACILITIES	RECREATION FACILITIES	UTILITIES AND MEDICAL FACILITIES	REMARKS
B Lyons, GA BO <sup>O</sup> 02'N; B2 <sup>O</sup> 19'W	3,739 (1974)	Number of houses: 1,310. Renter occupied: 631. Vacant year round: 90. Number of houses for sale: 7; average sale price, \$15,400. Number for rent: 73; median rent, \$44.  (1970 data)	<pre>1 Elementary school: grades 1-5, enrollment 878. 1 Junior High school: grades 6-8, enrollment 585. 1 High school: grades 9-12, enroll- ment 599.</pre>	2 Football fields. 2 Gymnasiums. 3 Baseball fields. 2 Softball fields. 23-acre park with swimming pool, playground equipment and a picnic area. Boating and fishing are available on the Ohoopee and Altamaha Rivers. (1975 data)	Water: Source, 1 well; capacity, 1,000 gpm. Water treatment includes chorination and fluoridation at the well.  Sewerage: Capacity capable of serving a population of 4,900. Treatment facilities consist of two oxidation ponds.  Gas: Southern Natural Gas Company. Capacity 6.5 million ft <sup>3</sup> per day and recorded peak demand is 5.5 million ft <sup>3</sup> per day.  Electricity: Georgia Power Company.  Medical Facilities: 1 private hospital (14 beds); 4 physicians; 3 registered nurses; 1 dentist; 1 health department.  (1975 data)	
9 Metter, GA 32 <sup>0</sup> 24'N; 32 <sup>0</sup> 04'W	2,912 (1974)	Number of houses: 1,500.  Number of rental houses: 250; average rent, \$100; average percent vacant, 5%.  Number of new houses per year: 15.  Number of sales per year: 125; average sale price, \$25,000.  Number of apartments: 25; average rent, \$100; average percent vacant, 1%.  (1975 data)	1 Primary school: grades 1-4, en- rollment 595. 1 Elementary school: grades 5-8, enrollment 574. 1 High school: grades 9-12, en- rollment 466. (1975 data)	2 Parks. (1975 data)	Water: Source, 2 wells; capacity, 1.44 mgd.  Sewerage: Treatment by septic tanks.  Gas: LP gas and fuel oil available.  Electricity: Georgia Power Company.  Medical Facilities: Candler County Hospital (60 beds); 6 intensive care units.  (1975 data)	Natural gas is not a- vailable in Candler County.
O Port Wentworth, GA 12 <sup>0</sup> 09'N; 13 <sup>0</sup> 10'W	3,905 (1974)	Number of houses: 1,200.  Number of rental houses: 75-100; average monthly rent, \$150.  Number of new houses per year: 3 (1975).  Number of apartments: 200; average rent, \$80; average percent vacant, 40%.  (Below minimum standards).  (1975 data)	4 Elementary schools: enrollment 1,586. 2 Junior High schools: grades 8-9, enrollment 1,409. 1 High school: grades 9-12, enrollment 1,009. (1975 data)	No data	Water: Source, 2 wells; capacity, 1,000 gpm.  Sewerage: I secondary treatment plant. Gas: Savannah Gas Company and Southern National Gas Company.  Electricity: Savannah Electricity and Power Company; I generating plant.  Medical Facilities: No data.  (1975 data)	Water capacity is adequate for the present population. Electric power is also received from the Georgia Power Company under a purchase agreement.
I Saint Simons Island, GA Bl <sup>O</sup> ll'N; Bl <sup>O</sup> 24'W	5,346 (1974)	Number of houses: 2,176. Renter occupied: 474. Vacant year round: 20%. Average number of sales per year: 46; median price, \$26,000. Number of units for rent: 145; median rent, \$172. (1970 data)	No data	No data	No data	
2 Savannah, GA 12 <sup>0</sup> 04'N; 11 <sup>0</sup> 06'W	118,349 (1974)	Number of single unit dwellings: 24,320.  Number of new houses per year: 198.  Number of multi-unit dwellings: 16,531.  Average percent vacant of all dwelling units, 3.5%.  (1975 data)	The Chatham County Board of Education operates and maintains a total of 55 regular public schools. This includes 39 elementary schools, 8 junior high schools and 8 high schools.  The 1975 total enrollment for Chatham County public schools was 30,169. In 1974 there were 28 non-public schools in the Savannah, Chatham County area with a total enrollment of 8,609 (grades 1-12).	17 Public and 13 private tennis courts. 3 Public and 3 private golf courses. 2 Bowling alleys. 32 Parks and squares in the city. 10 Theatres. 37 Neighborhood playgrounds. (1975 data)	Water: 23 artesian wells; capacity over 23 mgd.  Sewerage: No data.  Gas: Savannah Gas Company and Southern Natural Gas Company.  Electricity: Savannah Electric and Power Company.  Medical Facilities: 3 hospitals (1,101 beds); 37 intensive care units; 12 coronary units.  (1975 data)	Electric power is also received from the Georgia Power Company under a purchase agreement.
3 Statesboro, GA 2 <sup>0</sup> 27'N; 31 <sup>0</sup> 47'W	14,616 (1974)	Number of houses: 4,989.  Number of rental houses: 2,629; average monthly rent, \$250 (3 bedroom).  Average percent vacant: 5.5%.  Number of new houses per year: 90; average sale price, \$35,000.  Number of apartments: 734; average rent, \$155 (unfurnished), \$195 (furnished).  (1970 data)	(1975 data)  4 Elementary schools: grades 1-3, enrollment 469; grades 4-6, enrollment 989; grades 1-9, enrollment 493; grades 1-3, enrollment 483.  3 Junior High schools: grades 8-9, enrollment 742; grade 7, enrollment 341; grades and enrollment unknown for third school.  1 High school: grades 10-12, enrollment 1,051.  (1975 data)	10 Neighborhood recreational facilities. 1 Lighted little league ballfield. 1 Lighted softball field. 1 Lighted regulation baseball field. 1 Picnic area. 1 Outdoor swimming pool. 4 Tennis courts. 1 Recreation building. 1 Privately owned golf course. (1975 data)	Water: Source, 5 wells; capacity, 6.4 mgd.  Sewerage: capacity, 1 mgd; trickling filter treatment plant.  Gas: Southern Natural Gas Company.  Electricity: Georgia Power Company.  Medical Facilities: 2 hospitals (133 beds); 2 nursing homes (125 beds); 1 clinic. 1 Health department.  (1975 data)	
4 Thunderbolt, GA 1 <sup>0</sup> 59'N; 1 <sup>0</sup> 04'W	2,750 (1974)	Number of houses: 691.  Number of renter occupied: 3.  Number vacant year round: 34.  Number of sales: 2.  Number for rent: 18;  median rent, \$60.  (1975 data)	l Elementary school: enrollment 401. The Chatham County Board of Education operates and maintains 55 public schools, 39 elementary, 8 junior high schools and 8 high schools.  (1975 data)	No data	Water: Source, 2 wells; capacity, 1,335 gpm.  Sewerage: Septic tanks.  Gas: Savannah Gas Company and Southern  Natural Gas Company.  Electricity: Savannah Electric and  Power Company.  Medical Facilities: No data.  (1975 data)	Electric power is also received from the Georgia Power Company under a purchase agreement.
IS Windsor Forest, GA B1 <sup>0</sup> 57'N; B1 <sup>0</sup> 07'W	7,288 (1974)	Number of houses: 2,233. Renter occupied: 474; number of units for rent, 145; median rent, \$172. Number vacant year round: 207. Average number of sales per year: 46; median price, \$26,000. (1970 data)	No data	No data	No data	

(1970 data)

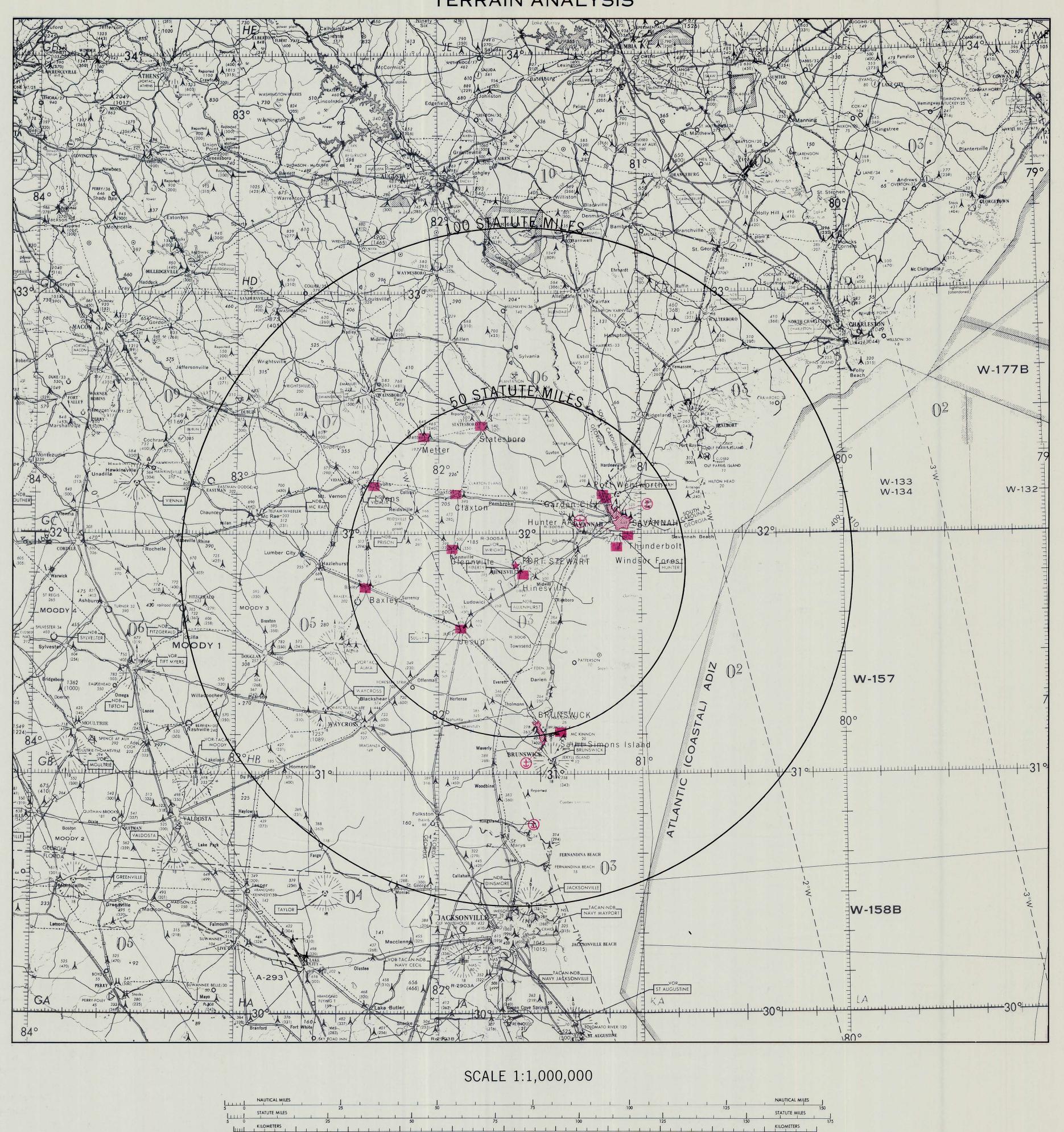
## C. Ports

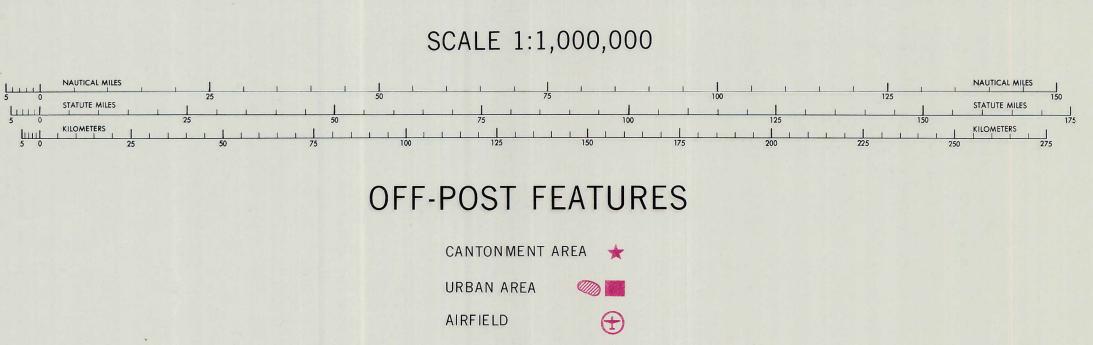
Three ports within a 100-mile radius of Fort Stewart -- Port of Savannah, Port of Brunswick and Kings Bay Ammunition Terminal -- will support ocean-going vessels.

NAME AND LOCATION	TYPE AND GENERAL CONDITION	FACTORS LIMITING LARGEST VESSEL	HYDROLOGIC CONDITIONS AND UNUSUAL GEOPHYSICAL CONDITIONS	PIERS AND WHARVES	MECHANICAL HANDLING FACILITIES	STORAGE FACILITIES	CLEARANCE FACILITIES	REMARKS
Port of Brunswick, 31°09'N; 81°30'W	Natural river harbor; excellent condition; 1,783,373 metric tons (1,965,799 short tons) of freight handled in 1974.	Approaches: minimum depth*, 8.2 m (27 ft), minimum width, 45 m (150 ft).  Anchorages: minimum depth, 7.9 m (26 ft).  Alongside berths minimum depth, 0.9 m (3 ft), maximum length, 652.3 m (2,140 ft), minimum clearance, 6.1 m (20 ft).	Mean tidal range on the bar is 2 m (6.5 ft), at the city of Brunswick, 2.2 m (7.3 ft), and at the end of the harbor, 2.1 m (7.6 ft). Seasonality has little impact on high and low tides.	There are 19 piers, wharves and docks, 11 are used for cargo handling, and 8 are used for marine services and repairs.  Lengths range from 20-500 m (65-1,640 ft).  Depths alongside: range from 0.9-9.1 m (3-30 ft).  Heights of decks: range from 3-4.3 m (10-14 ft).  Type of construction: concrete piles with concrete deck and timber piles with timber decks.	One travelling, revolving, full-portal, gantry crane, equipped with a 30.5 m (100 ft) boom with a lift capacity of 22.7 metric tons (25 short tons) at a 13.7 m (45 ft) radius, and 7.3 metric tons (8 short tons) at a 30.5 m (100 ft) radius.  One 1.8 metric ton (2 short tons) fork lift and one front-end loader.	Covered storage. 8,445.5 m² (90,910 ft²).  Open storage: large areas at rear of transit sheds on Brunswick state docks.  Petroleum storage. ten storage tanks, with total capacity of 76,389,203 liters (480,490 bbl).  NOTE Barrel capacities refer to a 42 gallon barrel.	Railroads The Port of Brunswick is served by: The Seaboard Coast Line Railroad and the Southern Railroad System. Fort Stewart connections are made via the Southern Railway System (to Jesup), the Seaboard Coast Line (to Walthourville), and the US Government Railroad Line (to Fort Stewart). Roads: Hard surface (asphaltic, concrete) roads serving the port area connect with US Route 17, Interstate 95 and Georgia Route 144.	
Port of Savannah; 32°05'N, 81°05'W	Natural river harbor, excellent condition, 8,798,642 metric tons (9,698,679 short tons) of freight handled in 1974.	Approaches: minimum depth*, 8.2 m (27 ft), minimum width, 60.9 m (200 ft). Anchorages: minimum depth, 5.8 m (19 ft). Alongside berths. minimum depth, 7.9 m (26 ft); maximum length, 1,178 m (3,865 ft); minimum clearance, 3.9 m (12.8 ft).	Mean tidal range: 2.4 m (7.8 ft) at the upper end of the harbor, and 2.1 m (6.9 ft) at the lower end. Extreme tidal ranges, 3.4 m (11.1 ft) and 3.3 m (10.7 ft) respectively.	There are 51 commercial piers and wharves; 36 are used for cargo handling, 2 for passenger handling, 12 for marine services and repairs, and 1 is not used for handling water-borne commerce.  Lengths: range from 10.7-1,178 m (35-3,865 ft).  Depths alongside: range from 7.9-8.8 m (26-29 ft).  Height of deck: range from 0.8-5.2 m (2.5-17 ft).  Types of construction: concrete; timber and steel sheet piles; timber and concrete decks.	Two 40.8 metric tons (45 short tons) capacity gantry cranes; three 40.8 metric tons (45 short tons) yard transfer cranes, four 31.8 metric tons (35 short tons) gantry cranes; two 45.4 metric tons (50 short tons) cranes; six top lifting trucks, six gantries 31.8 metric tons (35 short tons) each.	Covered storage: 161,014 m² (1,733,200 ft²). Open storage: 345,186 m² (3,715,668 ft²). Refrigeraged storage: 27,477,110 liters (970,374 ft³). Petroleum products storage: 174 storage tanks with total capacity of 838,549,910 liters (5,274,500 bb1). NOTE: Barrel capacities refer to a 42 gallon barrel.	Railroads: Georgia Port Authority served by the Central of Georgia Railroad, the Seaboard Coast Line Railroad, the Savannah State Docks Railroad, and the Chatham Terminal Company. The Garden City terminals connect two railroads serving the port area. The Seaboard Coast Line Railroad passes 9.7 km (6 mi) south of Fort Stewart at Walthourville. The US Government Rail- road connects Walthourville and Fort Stewart. Roads. Hard surfaced (asphalt, concrete, and cobblestone) roads serving the port area connect with US Routes 17 and 80. Fort Stewart connections are made via Inter- state 16, Interstate 95, and Georgia State Route 144.	
Kings Bay Ammunition Terminal, 30°40'N, 81°28'W	Natural harbor, condition unknown.	Approaches: minimum depth*, 10.4 m (34 ft); minimum width, 61 m (200 ft). Alongside berth. depth, 9.7 m (32 ft).	Mean tidal range is 1.7 m (5.7 ft) at the entrance of Cumberland Sound and 1.8 m (6.1 ft) at nearby Fernandina Beach. The tidal currents at the entrance to Cumberland Sound have considerable velocity and are dangerous at times.	One ammunition loading dock 609.6 m (2,000 ft) long, 26.5 m (87 ft) wide, and a deck height of 4.3 m (14 ft), with alongside depth of 9.7 m (32 ft).	Two 9.1 metric tons (10 short tons) mobile hoists.	Covered storage 1,040.5 m² (11,200 ft²). Rail storage. 6.4 km (4 mi) of track.	Railroads The Port area railroad connections to Fort Stewart are made via the Saint Mary's Railroad Company Line (to Kingsland), the Seaboard Coast Line (to Everett), the Southern Railroad (to Jesup), the Seaboard Coast Line (to Walthourville) and the US Government Railroad (to Fort Stewart).  Roads: Hard surface (asphalt and concrete) roads serving the port area connect with Georgia State Route 40, Interstate 95 and Georgia State Route 144 (to Fort Stewart).	The facility is owned by the US Government and is operated by the Blue Star Shipping Company. The port is presently inactive, but usable (contingency port), and is used strictly for ammunition loading and unloading.

\*NOTE: All depths refer to plane of MLLW. (Mean lower low water).

# FORT STEWART, GEORGIA TERRAIN ANALYSIS





PORT

# IV. LIST OF SOURCES

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